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Gleanings in Bee Culture

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GLEANINGS IN BEE CULTURE

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ABBE PINCOT (*L'Apiculteur*, 52) says that larger cells give larger workers, and that cells measuring 4.57 to the inch are the largest that Italians accept for worker brood.

NURSE BEES, during the care of the brood, consume more than the brood itself, says Dr. Bruennich (*Leipz. Bztg.*, 68). From this he argues the immense advantage there is in having long-lived bees, allowing a large population with a small brood-nest.

J. E. HAND, p. 843, is emphatically right in saying that superseding queens in spring is a loss. Generally better pinch the head of any spring-reared queen—at least in this locality. Fortunately, it is a rare thing that bees supersede a queen in spring, that business being attended to by them later in the season.

E. BOHM (*Leipz. Bztg.*, 52) says it is a plausible theory that a colony made queenless will start queen-cells from too old larvæ; but the actual fact is that, in a colony in the height of its vigor (and no other should be used for starting cells), with few exceptions always the youngest brood is chosen for royal cells. From these proceed just as good queens as if the egg had been from the beginning destined for a queen.

COMBS OF BROOD with adhering bees may be used to strengthen a weak colony; but the queen of the weak colony must in that case be caged, says G. Muths (*Leipz. Bztg.*, 54). For many years I have practiced this plan, having used thousands of such combs, and never caged a queen. But I am careful to give only in proportion to the strength of the colony, so that the strange bees may not be in the majority. When more than one comb

is given it is safer to have each comb with its bees from a different colony. [You are correct, according to our experience.—Ed.]

C. P. DADANT (*L'Apiculture Nouvelle*, 143) thinks my plan of breeding from best workers without regard to purity of blood is not the best plan. May be; yet I'm confident I have increased my crops by it. Still, the question is left whether I might not have increased crops just as much by selecting only from pure bloods. At any rate, if I had it to do over again I'd stick to pure blood, if for no other reason than to avoid such demons to sting.

A QUEEN-BEE at \$1.00 is probably about as common as a bull at \$50.00. May 30, at T. H. Cooper's sale, a bull was sold to A. B. Lewis for \$11,500. That's 230 times \$50.00; and 230 times \$1.00 is \$230. Is there any thing more unreasonable in valuing a queen at \$230 than in valuing a bull at \$11,500? [We once had a queen that we valued at \$200; and it is no exaggeration for us to say that we would give \$500 for her to-day if we could get her back.—Ed.]

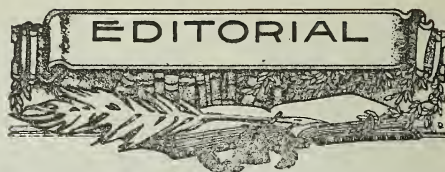
JUNG KLAUS, the bright and useful picker-up of items for *Deutsche Imker aus Boehmen*, has an unfortunate prejudice against things American which sometimes leads him astray. He says, p. 94, that Herr Schenk, of Brazil, who lately visited Europe, sings a different song from that of the gentleman in the north. Dear Jung Klaus, this country is about as far from Brazil as Germany from Central Africa, and the countries have about as much to do with each other. Please don't charge to our account the backward condition of bee-keeping in Brazil; and be a little patient if we do some cackling before the eggs are laid. Some of these days we'll learn from Germany to sober down, just as we have learned many other good things from there.

J. J. WILDER, a Georgian, thinks a hive-cover with an air-space best for hives exposed to the sun, saying: "I have lost some colonies, many combs, and no small amount of honey from the heat of the sun, but I have never lost any combs under these covers"

(*American Bee Journal*, 486). And please don't forget that these non-conducting covers are just as much warmer in winter as they are cooler in summer. [Why not go one better, and have the deep telescope cover? They not only protect the thin inner cover, but the sides of the hive clear down two-thirds of its way as well. This protects the hive against the sun, cool summer nights, and bad weather in a backward spring. It costs more, but it will pay for the extra cost in one season.—ED.]

C. KRUEGER, himself a countryman of Dzierzon, says (*L'Apiculteur*, 3), "It is not correct, as the Germans say in all their manuals of apiculture, that Dzierzon was the father of mobilism; his part in that was more modest. But, on the other hand, he wielded a most facile pen, and from 1845 he wrote in the two bee-journals then existing, and for more than a half-century he ceased not to make a propaganda for mobilism, but for mobilism as he understood it, and which has nothing in common with that of Langstroth-Dadant so universally adopted. . . . His hive was approved by only a very limited number of friends, whilst Langstroth had the satisfaction of seeing his own generally adopted. But that which will immortalize the name of John Dzierzon is the discovery of *parthenogenesis in 1853*." Delightful it is to find on the European continent a tendency to give Langstroth his tardy meed of praise. *Per contra*, let us hope that in this country bee-keepers in general shall learn to *know* more of their debt of gratitude to the grand old bee-master Dzierzon. [Huber invented the first movable-comb hives about the year 1789. Bar hives were in use long before that time, particularly in Scotland. I can show you illustrations of very good bar and frame hives which were in use long before Dzierzon was old enough to have any bees.—W. K. M.]

FOR SOME YEARS I had been breeding from my best gatherers without regard to color, and my bees were hustlers. But they were cross, and no mistake. Last year a certain editor insisted in a rather toplofty manner that I could have just as good workers of pure stock, and not get so many stings. I challenged him to furnish the queens of pure stock, and I'd give them a fair comparison. He seemed inclined to flinch, but finally came up to the scratch, and I now have 18 colonies headed by queens of his choosing or their royal progeny. An inventory of the strength of colonies the first week in June showed the new stock to have a larger acreage of brood than the old stock. Now crow, Mr. Editor. No, don't crow just yet; wait till I tell you how they compare as to amount of honey stored when the harvest is over. Remember that the most prolific queens and the largest crops don't always go together. [We shall be greatly interested in the further performance of these bees. You are right. It is the honey-gathering qualities that should count. But plenty of good brood at the right season of the year is a good omen.—ED.]



NEW JERSEY now has a pure-food law which takes effect October 1, 1908. It corresponds with the national law on the same subject. It may seem odd that the law is dated so far ahead of time; but New Jersey has a food law now in force, passed in March, 1901. The new law does not supersede the old one, but brings it in line with the United States law. As early as 1886 the State had a law to prevent the adulteration of butter, and the regulation of butterine and margarine.

THE LACK OF PURE-FOOD LEGISLATION IN THE SOUTH.

WE have had no good news from the South regarding the passage of pure-food laws calculated to help the producers of genuine foods. Practically the entire tier of northern States has wheeled into line under the pure-food banner, and the honey-producers and others are now well protected against an insidious enemy who threatened to destroy our industry. We can not feel entirely safe till the South has joined us. A pure-food law is practically self-enforcing—at least the actual cost of administering it is small, and the amount received in fines reduces the cost to a mere trifle.

NAILS IN NAIL-SPACED FRAMES A NUISANCE IN UNCAPPING.

REFERRING to a footnote to a Straw on p. 754, Mr. Leslie Burr, of Berthoud, Col., refers us to the illustration on page 765 of GLEANINGS for 1903, where is shown a very fat nail-spaced extracting-comb taken from an eight-frame extracting-super where only six frames were used. The illustration shows how the capped comb had gone clear over the nail spacers, and Mr. B. very pertinently asks whether the nails would interfere in uncapping *such* a comb. We shall have to acknowledge, in this case, he has the best of the argument. But there are very few who believe it would be good practice to run six extracting-frames to an eight-frame super. Mr. Holtermann, who uses metal spacers, has no trouble.

In this connection it might be well to ask whether the honey in these very fat thick combs is as well ripened as that in thinner ones. We should be glad to learn the experience of all practical honey-producers on these points.

NOT ALL EXTRA-YELLOW BEES LACKING IN HARDINESS.

DOOLITTLE & CLARK, who are doing quite an extensive business in queen-rearing, in referring to a recent editorial on the hardi-

ness (or rather lack of it) of five-banded or extra-yellow bees, write:

Mr. Root:—We notice in an editorial in May 15th GLEANINGS that you give our grade of bees a rap, stating that they spring dwindle more than others. Ours don't bother us that way. We placed about 100 colonies in the cellar last fall, and have lost but one of them to date, and that one was a strong one when taken from the cellar, but starved to death during the cold spell about April 1. We also wintered in the cellar 52 nuclei, and they are alive to-day, and building up strong. In addition to these we had nine colonies wintered out of doors, and they are all alive and strong. Our bees are holding their own, and some of the colonies have brood in eight frames out of ten. Doolittle & Clark.

Borodino, N. Y.

We are glad to place this before our readers, as we have reason to believe their stock was not reared from the same ancestry as the ordinary yellow bees. We did not intend to convey the impression that *all* yellow stock was hard to winter or spring, but that a good deal of it that had come under our observation would seem to be very frail and short-lived.

EXPERIMENTS WITH MOLASSES AND SYRUP AS A FOOD.

THE Louisiana Sugar-planters' Association is just now engaged in an experiment with a squad of negro prisoners in an effort to determine the value of molasses as a food for mankind. Thus far the experiments tend to show that the feeding of both molasses and syrup are useful foods.

But what renders these experiments largely useless is the fact that only the very best grade of either syrup or molasses is being used in the test. Most people are fairly well satisfied that a high grade of either is good eating; but what the general public would like to know is the value of the other grades, particularly the lower ones, on the human system. For this reason the experiments now being conducted can have but little value, for the Department of Agriculture would not be justified in giving ordinary syrup or molasses a good character because the highest quality stood a test. It would be better for us all if low-grade molasses and syrups were entirely eliminated from the markets of this country.

SUGAR AND ITS DANGERS.

A GERMAN scientist of high repute, Dr. von Bunge, in the *Journal of Biology*, has just published an article, "The Increased Consumption of Sugar and its Dangers." This German *savant* says it is well known that children who eat much sugar have bad teeth, and are pale, and this is undoubtedly due to the lack of phosphates—iron and lime. This information comes from Germany, where the price of sugar is very high and the consumption limited. It is in Great Britain, where the consumption of sugar is far higher than in any other country, that sugar diseases, notably *diabetes*, are more common than elsewhere. It has been observed that in cane-sugar-producing countries, on the other hand, the negroes employed are fat and healthy, yet this does not alter the case any, because these laborers

never use our white sugar, and, in fact, are in the habit of extracting the juice of the sugar cane by means of their own teeth. In using sugar they much prefer raw sugar made by a simple process similar to our method of producing maple sugar in the woods.

As a remedy, Dr. Bunge proposes that the German government largely increase the revenue tax on beet sugar produced in the empire of Germany.

THE APPOINTMENT AND JURISDICTION OF INSPECTORS IN ONTARIO, CANADA.

VARIOUS conflicting reports appeared as to the appointment of inspectors and their jurisdiction in the province of Ontario. Desiring to get the facts we wrote to the Minister of Agriculture, at Toronto, for an official statement. This has been received, and we take pleasure in presenting the same herewith.

Toronto, Ont., June 14.

Dear Sirs:—I beg to acknowledge your enquiry of the 11th inst. as to the jurisdiction of the Inspectors appointed in Ontario under the Foul-brood Act. The names of the Inspectors and the districts for which they are to act are as follows:

J. Alpaugh, Dobbinton, Ont.—Wellington, Waterloo, Perth, Huron, Grey, Bruce.

James Armstrong, Cheapside, Ont.—Norfolk, Brant, Oxford, Elgin, Kent, Essex, Lambton.

James L. Byer, Mount Joy, Ont.—Ontario, Victoria, Peterborough, Durham, Northumberland, Hastings, Prince Edward.

Matthew B. Holmes, Athens, Ont.—Lennox & Addington, Frontenac, and all points east of those counties.

William McEvoy, Woodburn, Ont.—Wentworth, Lincoln, Welland, Haldimand, Middlesex.

H. G. Sibbald, Claude, Ont.—York, Peel, Halton, Simcoe, Dufferin.

The position occupied by Mr. McEvoy, who has hitherto acted as Provincial Inspector, is precisely similar to the other Inspectors, except for an arrangement whereby he may be sent into other districts to deal with exceptional cases. This, however, will be done only under specific instructions from the Department and will in no sense interfere with the work of the other Inspectors.

NELSON MONTEITH,
Minister of Agriculture.

"THE PUBLIC HAVE A RIGHT TO KNOW."

IN the *American Grocer* for June 5, under the editorial caption of "The Public have a Right to Know," the following paragraph concerning Dr. Wiley appears:

At the recent convention of the Cotton-seed Crushers' Association, at Jamestown, Dr. Harvey W. Wiley reiterated his oft-expressed opinion that honesty and publicity were potent to build up and not tear down demand for an article. Referring to glucose, he said: "The disadvantage under which glucose labors to-day is due, in my opinion, to the persistent and determined efforts to distribute it among the citizens of this country under some false name."

We have already spoken of the good work that Dr. Wiley was doing. The moneyed interests vested in some food products have no use for him. He will tell what he thinks, and his recommendations go a long way in the Department of Agriculture. Yes, he is a big thorn in the flesh of those food concerns that have been putting out adulterated or misbranded goods. The glucose people especially are opposed to him, and no wonder, for he says things that hurt. If these interests would be content to sell their product for what it is, and not attempt to palm it off under new and well-sounding names,

the lovers of good and pure food would not have much of which to complain. Dr. Wiley has evidently hit the nail on the head and we hope he will keep on driving his spikes until he has spiked the guns of all the enemies of pure food.

ANOTHER PURE-FOOD SHOW; AN OPPORTUNITY FOR BEE-KEEPERS.

BOSTON is not going to allow Chicago to monopolize the pure-food-exhibition business, and has decided to hold what it calls a "Food Fair and House-furnishing Exposition;" and as the bean city is the avowed center of the universe it ought to be a great success.

Every available foot of space in Mechanics' Building, including Grand Hall and Exhibition Hall, with the lower floor and balcony of each, and second balcony of Grand Hall, Banquet Hall, Paul Revere Hall, and Talbot Hall, comprising over 200,000 square feet of space, has been leased.

This seems to us a very favorable opportunity for New England bee-keepers to show to the world that honey is the best food known to mankind, requiring no cooking, spices, condiments, or other manipulations to make it palatable, and, what is more important, that comb honey can not be counterfeited successfully, and also that, under the national pure-food law, extracted honey is protected from adulteration, and honey is honey. There is also a work to be done in educating the public in the matter of distinguishing the different flavors of honey. We have made a great gain when a customer has learned there is a kind of honey that exactly suits his or her palate.

REQUIRING COMMISSION MEN TO GIVE BOND FOR THE FAITHFUL PERFORMANCE OF THEIR DUTY TOWARD CUSTOMERS.

THE State of Washington is making an experiment which will be watched with considerable interest in all parts of the country. A law was recently passed by the legislature of that State, compelling all commission houses to file a bond. Houses not rated at more than \$20,000 have to put up \$3000 for the faithful performance of their duty toward those who ship goods to them. Another provision is that an account-sales must be sent to the shipper within 48 hours after the receipt of the goods.

The object of the law is to drive irresponsible houses out of the business, and in this respect the law will have a salutary effect. The idea of setting a time-limit for sales does not seem to be wise; at least, 48 hours is rather too short a time to effect sales. The principle of compelling these houses to file an iron-clad bond seems to be good, and will probably be imitated by other States.

The commission business is all right in itself; but it has been greatly injured by some irresponsible parties who have neither capital nor honesty to back up their promise of a square deal to the shippers. We don't let such people into our Honey Column if we know it.

CUTTING ALFALFA BEFORE IT IS RIPE—A DANGEROUS PRACTICE.

"It is well known also that *immature* alfalfa is much more apt to injure stock when cut for hay than well-manured well-cured alfalfa." So says Prof. A. M. TenEyck, of Kansas Experiment Station. No man in the United States is better authority on the subject of alfalfa than Prof. TenEyck, and yet he unreservedly condemns the cutting of immature alfalfa. He wrote the above opinion in answer to a correspondent of the *Kansas Farmer*, who mentioned the loss of a young horse by eating a few mouthfuls of alfalfa hay cut before the blooming period. Some one attributed the loss of the horse to the fact that the hay had been frost bitten. Prof. TenEyck, however, says alfalfa cut before blooming would have this effect, and frost had naught to do with it.

Some time ago the Colorado Experiment Station, in a valuable bulletin (Bull. 35) showed that, by cutting alfalfa before blooming the net loss was about 38 per cent.

In the light of these facts it seems strange that many ranchers persist in cutting this crop before it has reached its blooming period. Apparently they have no good reason for a practice that seems to be a distinct loss to all concerned. Bee-keepers would do well to help disseminate this truth. There was a time when we feared that early cutting would become a general practice, and, if so, the output of alfalfa honey would be correspondingly reduced.

THE DOG IN THE MANGER; DESIRABLE LOCATIONS FOR BEE-KEEPERS IN NEW TERRITORY.

EVERY now and then we receive requests for information as to the best places to keep bees. Many of the inquirers state that, owing to ill health, it is necessary for them to move to a warmer climate, such as, for example, that of Texas, Arizona, or California; what points in any of the States would we advise?

As a general rule the desirable locations in the Western States where alfalfa is grown have all been taken up. In some places the territory is greatly overcrowded; and for one more bee-keeper to move in is like adding the "straw that breaks the camel's back;" that is, it makes the business of honey production unprofitable for all.

On page 690 of our issue for May 15th we gave a list of localities that the government was about to irrigate. In most of these regions proposed to be watered, the land is cheap, being practically a desert; but with the advent of the one thing needful, *water*, and plenty of it, alfalfa will be grown by the thousands of tons. This will necessarily create fine bee pasturage.

Those who have any notion of changing their location should get in close touch with the places about to be irrigated; then, after learning whether the soil is suitable for growing alfalfa, be the first one to set bees in the territory, or at least among the first. The

immense irrigation projects that are already under way and in prospect will mean some fine bee territory not now occupied.

This country is so large that there will be room for all; but in taking up these new bee-ranges, bee-keepers both in fact and in prospect should endeavor to abide by the golden rule—that is, to be careful about overlapping the other fellow's bee-range. Do not get nearer than three miles, and four miles between the yards of bees would be better. It will be well if the new settlers could so agree; and in nearly every case, if not all, the first bee-keeper on the ground should have the undisputed possession of the territory in range of his bees. Let the rule of "live and let live," rather than "get all you can, whether it hurts the other fellow or not," be the guide.

While it is true that, legally, one will have just as much right to a given bee range as another, yet when one bee-keeper can make a fair living off a given bee range, and three would starve to death, why should not one (the first on the field) be allowed to make that living? There should be, and need be, no dog in the manger about this business.

NEW HONEY-PRODUCING TERRITORIES THAT WILL BE MADE AVAILABLE FOR BEE-KEEPERS.

We have already referred to the great irrigation works now being constructed by the United States government, and which form only a part of the vast amount of land now being recovered from the desert, and which, when it has been planted, forms excellent opportunities for bee-keeping on a profitable basis. To give some idea of what a beneficent government can do in this respect we may instance the fact that recent maps of Idaho show a new lake (Walcott), which is 35 miles long, and, at its deepest, 300 feet. The largest warship in the world could steam over it in safety, and at a medium speed would take two hours to cover the distance. A similar lake will also be created in New Mexico, and much larger ones are contemplated.

The effect of these vast improvements is to render bee-keeping a safe and profitable business in the localities affected. On the other hand, it is estimated that 60,000,000 acres of really valuable land may be recovered from swamps in this country by drainage. This will be of great material benefit to the bee-keepers by allowing a good class of honey-plants to grow where sedges and canes formerly held the ground.

There is also another sort of land which is bound to be reclaimed at an early date. This is overflow lands subject to inundation at times. California has a considerable quantity of such land. It is good bee territory except for the risk of losing one's all by a flood. In most cases a simply constructed levee would protect such lands and render them perfectly safe.

There is considerable prospect of much land being deliberately planted out in forests, and these, in most cases, will be formed

of honey-producing trees. This has been referred to before. It is true, much of our forest land is being ruthlessly cut down; but in Michigan, Minnesota, and Maine, when the white-pine forest is cut over, the fireweed or willow herb and the raspberry, both of them splendid honey-plants, take complete hold of the soil.

In the South, on the other hand, when the yellow pine forests are cut, the gallberry bush (another exquisite honey-plant) takes full possession at once.

Then also the modern farmer is more inclined than ever to use leguminous plants, which are honey-yielders in nearly every case. Moreover, we have the new pure-food laws which give stability to honey prices and prevent scheming men hammering the price of pure honey down to a point where it does not pay the producer.

There is no exaggeration in presenting these facts, hence it is safe to say the outlook for the bee business was never better.

HIVE-LUMBER SITUATION.

BEE-KEEPERS have been greatly exercised for some time over the high price of hives and other bee-supplies made of wood, and some have flattered themselves that in time prices would come down. There does not seem to be much hope for this consummation; on the contrary, all signs point the other way, for, according to a recent bulletin issued by the Forestry Bureau at Washington, we are using up the white-pine forests at least three times as fast as we ought to, though at present we are using only half as much as we did in the latter eighties.

At the annual meeting of the Northern Pine-manufacturers' Association in Minneapolis, January 22, 1907, the secretary, J. E. Rhodes, made this statement:

"Since 1895, 248 firms, representing an aggregate annual output of pine lumber of 4½ billion feet, have retired from business, due to the exhaustion of their timber supply. Plants representing approximately 500 million feet capacity which sawed in 1906 will not be operated in 1907." It may be argued that we might use some other lumber—for example, cypress or Douglas pine; but this would hardly help us, for the freight rates on either are very high, as one is produced in the extreme south and the other in the extreme northwest.

Of course, we might use substitutes; but, unfortunately, these are dearer in the end than good white pine. It must be borne in mind, also, that bee-keepers demand the very best lumber in their hives.

Luckily the ordinary bee-keeper uses only a small amount of lumber each year.

THE DIFFERENCE BETWEEN SYRUP AND MOLASSES PRODUCED IN THE TROPICS.

THE two sweetening agents above mentioned come into open competition with honey to a very considerable extent, and yet the average consumer in the North can not distinguish between syrup and molasses, though

he may be in the habit of buying both. Corn syrup most Americans know to be glucose made from starch—that in the United States being made from hydro-chloric acid (or sulphuric) and corn starch. Strictly speaking it is not "corn syrup," as a syrup can be made from the juice of the corn. Sorghum syrup, with a good deal of justice, might be termed "corn syrup." It is because glucose has acquired such a bad reputation that the makers of it now wish to fool the public by giving it a name that would suggest sorghum. The U. S. Pure Food Commission ought to make a ruling on this point. It would make a difference to consumers if glucose were labeled glucose—exactly what it is.

Most people are aware what maple sugar looks and tastes like—at least they will have the chance this year. But many are not so well aware that a syrup almost as good is made from the sugar-cane plant. This industry is almost confined to Florida, Porto Rico, and Georgia, where the cane-farmers make a nice syrup by a simple process. Lately they could not resist the temptation to adulterate their product by adding glucose in large proportions, chiefly with a view to lightening its color. They probably did this to please the dealers who imagined that, the lighter the color, the better it would sell. A good many are using lime and sulphur to clarify and lighten the color of the syrup; but Dr. Wiley condemns this practice, for neither agent is wanted in a product intended for human consumption.

Probably most of the cane-farmers will return to the old method of simple evaporation. This leaves the flavor of the sugar cane unimpaired. A sugar similar to maple sugar is made in this way. A fine syrup can also be made by taking yellow cane sugar and reducing it by the addition of water.

Molasses, on the other hand, is a by-product of sugar manufacture. The old-fashioned way of getting it was to store the wet dripping sugar into bags and allow these to drain out the molasses into a vat. In fact, the process was not very nice for spectators to look at; but as a rule the consumers did not know how it was made; and "where ignorance is bliss 'tis folly to be wise." But the newer processes produce a much worse article, not fit for human consumption, and even of doubtful value for domestic animals, since it contains large quantities of powerful chemicals used in refining the sugar. It can be made into alcohol, and that is all it is fit for.

At present the American market is bare of both syrup and molasses—at least none is actually quoted. This is probably due to the action of the pure-food laws, as retailers and dealers are afraid of being caught by food-inspectors. There is a considerable amount of genuine syrup now used by the glucose-factories who are obliged to add from 10 to 35 per cent of cane sugar to their starch syrup to make it palatable. The more cane syrup it contains, the better it tastes.

The American people are extremely fond of liquid sweets, and would consume enormous amounts of a really good article if they

could get it. At present many make their own syrup by adding water to sugar. In the next few years the makers of genuine cane syrup will reap a harvest, as there is not nearly enough made to supply the demand.

ALSIKE CLOVER AND ITS INTRODUCTION IN THIS COUNTRY.

The following significant passage occurs in the *American Bee Journal* for December, 1866. Notice the date.

"We claim credit for having first brought to notice, in this country, the Italian bee and the Swedish (or alsike) clover, and urged the introduction of each as likely to prove a valuable acquisition."

It is not generally known that we owe the successful introduction of alsike to the founder of the *American Bee Journal*, Samuel Wagner.

We mention this to show what bee-keepers can do to improve the honey resources of the country. Nowadays Wagner is forgotten; but alsike clover is now considered a very important crop in many parts of the country, and a combination of timothy and alsike is considered by many the best for hay this country produces.

Sweet clover came later, and the prejudice against it has not yet been overcome. Had it not been for bee-keepers it might have been outlawed as a noxious weed. But it is steadily winning its way as a soil-renovator. We can easily remember when alfalfa was practically unknown east of the Rockies. Now it is known in every State. Sainfoin would probably do bee-keepers more good than any of these plants, but the problem is to get the farmers to give it a fair trial and study its nature and requirements. With these four plants growing in more or less profusion we need not fear the bee industry will cease to pay.

As this form goes to press, June 22, the weather throughout the United States is ideal for honey, and has been for about a week. In many places this good weather came too late to do any good; but in the great majority of northern localities it comes just in the nick of time. The ground is saturated; and where the clovers were not killed out by previous bad weather there will be a good flow of honey. Basswoods promise well everywhere. Some unofficial reports from California would seem to indicate that we may yet get a crop from that State. Many colonies of bees over the country have starved, and others are in a greatly weakened condition; but the bee-keeper who is progressive, and looks ahead, will have had his bees in fine condition; and if this favorable weather should continue he is going to get a fine crop of honey. There will be fewer bees and bee-keepers to produce honey this year. There will be no glucose concoctions masquerading under the name of honey as before. The result will be good prices for those bee-keepers who have had faith in their bees.



I like that picture of Benj. Paine's apiary, p. 403. The wife as well as himself is in it. No wonder he makes a success of bee-keeping. Where a man and woman both get interested in any work, look out for success.

Louis Scholl makes some good points about painting hives, p. 388. The best is the cheap-est, every time. For roof paint for hives I have found nothing to equal the B. P. S. paint. It lasts longer than any other I have ever used.

I believe Mr. Alexander's view of the effects of weather upon the yield of honey are sound, especially thunder-storms, p. 392. I hope that, after a time, we may have more certain knowledge of the influence of weather and soil upon the flow of honey.

That closed-end top-bar frame of D. S. Hall, p. 416, it seems to me, has some advantages over many; and if I were to adopt a self-spacing frame I believe it would be this in place of any other. I expect to try one or two hives of them the coming season.

The short biographical sketch of the life of A. F. Baumer, page 386, is full of inspiration to all who are engaged in business. Perhaps in nothing, aside from honey, has adulteration been practiced more than in wax; yet by honest methods this man made a success of his business.

That new-idea honey-package by Howard C. Mills is worth trying, p. 405. I suppose the time will come when, if one inquires at a grocery for honey, the clerk will ask which is preferred—comb, extracted, or granulated—with much less difference in price than at present between them.

Dr. Miller's head is pretty level on the bottom-starter business, p. 383; but I find that, as a rule, my combs are well fastened at the bottom. I use starters or foundation in sections so as to come down to about $\frac{1}{4}$ inch of section bottom, and it either sags or the bees almost always seem to build it down in a very satisfactory way. I don't remember ever using bottom starters. Doesn't the strain or breed of bees make some difference? We bought some comb honey last fall that had a good many sections that were not built down to the bottom of the sections. The honey was made by black bees. I have noticed, too, that when only a very small starter was used, sections were not so well fastened at

the bottom, and would be improved by a bottom starter.

A good deal is being written these days about whether it is safe to depend on bee-keeping alone for a livelihood, or whether it should be combined with some other business. Now, I see no reason why a little good reason should not be applied to this subject as well as to others. To expect a man to succeed in raising wheat on the hills of Colorado, or peaches in Minnesota, or in lumbering on the prairies of Illinois is on a par with expecting a man to succeed in bee-keeping where little or no honey is to be had. Of course, he must have a location that is fairly well adapted to his business.

Again, why should we expect a man to succeed in producing honey before he has thoroughly learned the business than to expect a wheelwright or carpenter or glass-blower or merchant or manufacturer, until he has thoroughly mastered his own kind of business?

We find in all trades and professions those who fail as well as in bee-keeping—those who meet with moderate success as well as those who have achieved enviable success.

The fruit-grower, the farmer, as well as the merchant or manufacturer, have their poor years when it is difficult to make both ends meet. The same is true of the bee-keeper. Ability counts in this business the same as in all other lines of effort. It is certainly true that a man can keep a few bees, a little dairy, and some poultry, and not meet with as great extremes as with any one kind of business; but I doubt if he can make all of them pay as well as if only one kind is followed.

If the venerable and kind-hearted Quinby were living to-day with all our improved modern appliances I very much doubt if he would advise any very large mixture of other kinds of business with his bee-keeping. The only kind of business I would add would be "more bees."

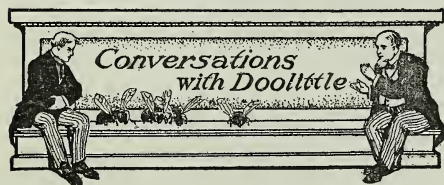
You make some pretty good points, p. 384, Mr. Editor, in reply to one of Dr. Miller's Straws with regard to commission-men. I'm afraid conditions are not always just as they should be. A year or two ago we were looking around for some choice extracted honey, and found one large dealer quoting such honey lower in his city than others were quoting in other cities. My son wrote, asking if he could supply us at those prices. The reply we received was somewhat surprising. He wrote that they took it all themselves, and there was no more than they needed for their business. Of course, if there is but one wholesale dealer, and he is willing to give only a certain price, or if there are several and they agree on a certain price to quote honey, and it is quoted at the price agreed upon, that, of course, is the going price, and it is not lying to say in print that such and such are the prices. After all, there seems to be something very unsatisfactory about it to

producers. Where there are but a few persons engaged in any one line of business, as the handling of honey, it is easy for them to control the price of honey to a considerable extent. There is usually a way out of difficulties, and I think we shall find one for this if we look carefully.

Honey is fast becoming a staple; and wholesale as well as retail grocers must have it if they carry a complete line of groceries. The number of wholesale merchants is very large as compared with those who make a specialty of honey. With a little assistance from the producer they would quite as soon buy of him as the honey-merchant, and will, on the whole, give better prices than the commission men.

Another way is the generous advertising of what you have to sell in any or all of our bee-journals. Let me illustrate.

Suppose I wished to buy 10,000 pounds of clover honey. Mr. B., living in Western New York, has just this amount, and he tells me so in a little advertisement costing him, perhaps, a dollar. How much better for him and myself for me to buy of him direct than for him to ship to New York and pay the freight, cartage, insurance, commission, etc., and then, perhaps, get no more, or but a trifle more, than I would pay him, and have it shipped direct to me! Thus with the increasing number of purchases the chance of getting all our produce is worth is very sensibly increased.



SUPERSEDURE QUEENS.

"I should like to have a little talk with you, Mr. Doolittle, about queens which are about to be superseded a little time before the honey harvest. This past spring I found that some of my older queens had hard work to keep up the strength of the colony. A part of these colonies would build supersedure queen-cells, and, although not very full of bees, several of them would swarm on these cells unless prevented."

"About what time in the spring did this happen, Mr. Sweet?"

"A large part of these colonies mothered by these queens would endeavor to supersede in May or June, and, although not by any means as strong in bees as those mothered by younger queens, quite a lot would swarm on these cells."

"What course did you pursue with these colonies?"

"I had started in to control swarming. Every queen that seemed able to do reasonable service till the flow should come was re-

tained, and the cells cut out. To do this I handled over the brood-combs of the entire apiary (for I could not tell just which ones would try to supersede their queens), once in ten days to two weeks."

"What has been the result?"

"So far the colonies with these aged queens do not seem to be doing nearly as well as the others."

"Why did you not take the old queen away and let a young queen take her place?"

"Because I did not consider it better to requeen in that way. It was a hard time to rear queens, and to have these colonies rear young queens would get no more brood for the flow than to keep just the old queens a while longer."

"And so you kept cutting out these cells?"

"Yes. By frequent overhauling of the brood-nests, and cutting out the cells, I was able to keep down this supersedure swarming."

"The same making you lots of work with the prospect of poorer returns in the end?"

"Yes."

"Say, Bro. Sweet, did you mean to give yourself away on this superseding business?"

"No."

"Well, if you did not you have done it all the same."

"How do you make that out?"

"You go on and tell me how the bees reared queen-cells to supersede those old queens, and how they swarmed with those cells, or the queens which emerged from them, and then tell me that you kept all of these old queens possible, because it was a hard time to rear queens. Didn't you do this?"

"I guess I shall have to admit that I did."

"Then you told me that, to have these colonies rear young queens, would get no more brood for the flow than to keep just the old queen a while longer. Is that right?"

"I guess it is."

"So you just worked and worked to keep down supersedure swarming?"

"That is right. I see you intend to give me a pounding so I might just as well own right up."

"Thank you. Now let me say that the queens which would have emerged from those supersedure cells would have been as good as any queens you ever had."

"But there was little or no honey coming in when these cells were being built and the larvae fed."

"I do not care for that."

"I know. But don't the bee-papers and books tell us that good queens can be reared only when there is plenty of honey and pollen coming in from the fields?"

"Yes; but that is when man is forcing the bees to rear queens. When the bees do this of their own accord, when their old mother is present right in the brood-nest with them, rest assured that they make no mistake. I guess I can prove this to you."

"I hope you can; for if this is so, I will be on the lookout for such cells in the future."

"In cutting or pulling these supersedure

queen-cells off the combs, what did you find in them—plenty of royal jelly or very little?"

"I guess you are going to prove your point, for I noticed that there seemed to be more jelly in them than in any queen-cells I ever pulled off, unless I except some extra heavy colonies which had swarmed very late one season."

"Yes. That royal-jelly business proves to your own mind that only the best of queens could have come from cells so well supplied. Therefore it was not a *hard* time to rear queens, for the bees reared them themselves, without any *hard* work on your part at all, and fed the larvæ in those cells, calculating to have the best of a mother from the one they saved. Now, why did you not take every cell you could find, but one, from the first colonies which built cells, and put one of those cells in each colony which you thought would try to supersede its queen later on?"

"I guess I was more bent on stopping this supersedure swarming than on studying up on this matter."

"If you had done this you could have superseded those old queens without any swarming, any cutting of cells, or *any expense* of brood-rearing, and done the whole at one stroke, for the old queen would have kept right on laying just the same for all the cell or the young queen emerging therefrom, till she got ready to die."

"Don't you think she would have tried to swarm from the giving of the cell?"

"No, not if given before a lot of cells had been started. It was the plurality of young queens in their cells which caused your weak colonies to swarm as you told me about. If you had given the cells as I have told you, you would have had all the brood you would have gotten from the old queen in any event, till this queen began to lay, when she would have boomed the brood with little danger from swarming during the whole season; for in the superseding of any queen before the honey harvest, the swarming fever seems to be satisfied, unless the colony swarms from a plurality of queens in the cells before a young one gets to laying."

"Well, this is entirely a new thought to me."

"If you will follow it out you will find it to be a good thought, for this has been the way I have managed with superseding cells coming early in the season, and I have found there is no work in the apiary which pays me better than that saving all supersedure cells."

the nicest hives, quite possibly because most of them are made in this country. They spend more money than we do on hives, and get a good article. Americans would not care to pay as much. They also go to more pains than we do in inserting full sheets of foundation in the brood-frames. In sections the foundation is fastened on all four sides, which produces better-finished section honey. The Britisher has the time to do things well, and he does them. No nation in Europe does better bee-keeping than old Ireland.

France is very scientific in all that it does, and bee-keeping is no exception to the rule. We might expect this in the mother-land of Réaumur, the founder of experimental apiculture. The hives of France are largely on the Dadant order, with deep frames for extracted-honey production; but American hives with Hoffman Langstroth frames and sections are making considerable progress. A French edition of GLEANINGS, published independently in Paris, is doing much to make French bee-keepers familiar with American methods of apiculture. No other country in Europe is so quick to appreciate our ideas as France, for the people generally are ardent admirers of the American republic, and the social and political systems of the two nations are much alike. France has always taken a prominent position in apiculture, and at the present time maintains about a dozen bee-journals. The system of movable combs has practically full sway, and we need not wonder at this since the French are a truly scientific people in all respects, always ready to accept something better.

Switzerland, small as it is, occupies a high position in the bee-keeping world; and, being the home of Huber, we need not marvel at it. It is also the homeland of our so-called Italian bees, for our leather-colored species comes from a part of the Swiss republic in and around Bellinzona. The Swiss bee-keepers maintain two bee-papers—one in German and the other in French. The one in German is a model bee-journal, handsomely illustrated, and quite scientific. The Swiss have some very prominent scientific men connected with the bee industry—notably the Goeldi family, two of whom started the fine museum at Para, Brazil, now presided over by Prof. J. Huber, a descendant of the great Francois Huber. Prof. Bourri, of the University Zurich, is a distinguished authority on bees, notably on foul brood and parthenogenesis.

Belgium stands well to the front in bee-keeping, maintaining six French bee-papers and one in Flemish. The bee-keeping industry is here pushed to its utmost limits.

Netherland has two bee-papers, and the industry is well looked after. It ought to be, in Swammerdam's country.

Germany and Austria maintain about 30 bee-papers at present, some of them very creditable productions. This shows the importance of bee-keeping in countries speaking the German tongue. Some of the best of these papers are published in Austria (Vienna), Bohemia, and Moravia; Switzerland,

Gleanings from Foreign Fields.

BY W. K. MORRISON.

The average American bee-keeper is anxious to know how his own country measures up against other countries in the matter of bee-keeping; but it is hard to give an answer. The United Kingdom certainly uses

and Luxemburg; but the bulk are actually published in Germany proper.

The bee-keepers in these countries are splendidly organized, and, as a rule, inclined to be scientific. But the hives in general use are not equal to those of Britain and France. Of late they have started to copy our hives, and some dealers are selling an exact counterpart of the Dovetailed and the Danzen baker.

In wax-extractors they excel. Deep-cell foundation is used by some, but it is safe to say no American bee-keeper would use it, for it is both very heavy and expensive. Their honey-extractors are also inferior to ours. One bee-journal, however, does nothing but advocate American methods, though this must be regarded in the light of "Can any good come out of Nazareth?"

The German, Austrian, and Hungarian bee-keepers meet this year in August at Frankfort on the Main. Next year they meet at Bukawina, at the extreme end of the Austrian-Hungarian empire, bordering on Russia. They muster in great numbers at these meetings.

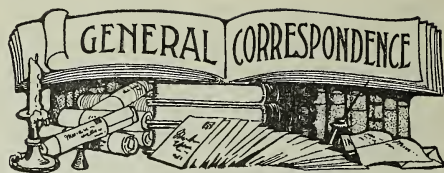
Hungarian bee-keeping is well to the front, and compares with Austria very well. Denmark, Norway, and Sweden have bee-papers copying largely from our American journals. Russia does a great deal in bee-keeping, and maintains several bee-journals gotten up in good shape. They turn some of their letters upside down, so we shall not read what they say.

Italy maintains two good bee-papers, but does not do as much as we should naturally expect from so favorably situated a country. In North Italy the industry is well developed, however.

Spain and Portugal are backward in apiculture, and neither has a bee journal at present. So is Greece. Roumania has or had a bee-journal. Servia patterns after Hungary.

Algeria and Tunis are prominent bee countries. The former, until lately, had a bee journal; but this was given up in favor of Mr. Bondonneau's paper, *Apiculture Nouvelle*. Tunis still keeps up its paper; and the bee-keepers' society there is quite wide-awake. They stick up for the Punic bee on all occasions, and probably it suits their conditions as well as any. Africa may be considered the homeland of the bee known to science as *Apis mellifica*, and bee culture is a successful industry over the entire continent. Even the Sahara has its apiaries located on the oasis where the date palm is the leading honey-plant. Egypt keeps its bees as of yore when the Pharaohs ruled the land. According to Schweinfurth the bees over a large part of Africa greatly resemble our hybrids in color, and according to some travelers their temper is about the same.

Quite possibly it would pay to make an investigation of the bees of Africa, but it would be a rather expensive business for an individual in any event. We know that there are several distinct species of bees in Africa and its islands, but our information as to their real value to us is next to nothing.



MAKING INCREASE VS. BUYING COLONIES.

Buying Bees in Hives of all Kinds and Shapes a Bad Plan; Danger of Bringing in Foul Brood; How to Make Early Increase.

BY E. W. ALEXANDER.

This question is of considerable importance to those who have but few colonies and are anxious to secure a larger number as soon as possible. If we could buy good Italian bees at a fair price in the same kind of a hive we use, filled with good worker combs, then it might be as well to buy part of our increase as to make them from the colonies we already have; but this we can seldom do unless we buy of a supply-dealer. Then we can get a good standard hive with good combs and as choice a queen as we care to pay for.

If you want to buy bees I think, when all things are considered, this is the better party to buy from.

If we get our bees of some one who has never kept more than a few colonies and is anxious to go out of the business, then we usually get hives of but little value except for kindling-wood, and combs fit only for wax, with queens from one to five years old, of all grades, from fairly well-mated Italians down the line to the blacks.

But sometimes it is best to buy these almost worthless colonies in order to get them where their drones can be destroyed. In this case you had better Italianize them as soon as possible, then set on top one of your standard hives filled with combs, one of which contains brood; then put their queen on this frame of brood and put a queen-excluder between the hives so as to keep the queen in the upper hive; then in 21 days take out the under hive and use it as you see fit. Your almost worthless colony will now be Italianized and nicely transferred to your standard hive. This we find is the most practical method of disposing of those undesirable colonies which were in hives of all forms and sizes.

If your circumstances are such that you can hardly afford to sacrifice a part of your surplus in making increase, then you must be careful and make only such increase as will add to your surplus. This is an easy thing to do where the principal harvest comes in August; but if it is in June, then it requires the most thorough knowledge of the best methods of rearing queens and dividing colonies that have ever been practiced, in order to make it a success.

Those of us who produce extracted honey

can make our increase much cheaper and easier than those who produce comb honey. With us we can divide our colonies in almost any way without seriously affecting our surplus. We always make rather more increase in June than we expect to put into winter quarters in the fall; then when a colony loses its queen, or is not what it should be, on the eve of our harvest we unite it with another. At this time we like to have every colony as strong as possible, and we care but little for weak colonies.

DANGER OF DISEASE.

One of the most serious objections to buying bees here and there around the country is the liability of bringing diseased colonies into your apiary. This we should ever bear in mind, and never take any chances that we can prevent. Then the trouble of finding bees for sale, and the expense of bringing them home, many times is no small matter. I have been all over this part of the business, and I don't care to try it again.

In regard to making our increase, it can now be done very easily since we can rear queens with so little trouble that it is easy to have all we care to use ever ready at almost any time. Then by stimulating breeding by feeding so as to have strong colonies ready to divide as early as our young queens commence to lay, we can certainly make our increase much cheaper than to buy undesirable bees; therefore I can not advise you to buy bees only in exceptional cases, but I do advise you to study well all the latest improved methods of rearing queens and making increase.

IMPORTANCE OF STARTING RIGHT.

You are the architect of your business—yes, of your whole life; so let no opportunity for improvement pass unimproved. Before entering upon bee-keeping or any other line of business, be sure you start right. My friend, did you ever realize the importance of those two words, "start right"? Teach your little children to study them; and when you see those poor drifting wrecks of humanity wandering up and down your highways in their abject poverty, tell your children that those poor souls which are now fairly steeped in vice and crime are the result of starting wrong in this life, and that only God knows what the result will be in the life to come.

Please pardon me in so often drifting from my subject; but when I think of that short sentence it seems as if I could write a whole volume on its importance.

THE RIGHT WAY TO MAKE INCREASE.

There are various ways of making increase. We prefer to build up the colonies to be divided until they are very strong in bees and brood; then when the division is made and the queenless part is given a laying queen, we soon have two good colonies ready for the harvest. We think this is a much better way than to build up nuclei. Let the same rule apply to making increase, as all other work in the apiary, which should be a har-

monizing with your knowledge and the natural instincts of your bees. This is quite important in order to secure the best results. If we adopt methods according to their natural instincts then surely we shall secure better results than if we try to force them into unnatural conditions, which to quite an extent soon causes them to become discouraged.

IMPROVING THE APPEARANCE OF THE APIARY.

We are now on the eve of another busy season; and while we are intent on securing all the surplus we can, let us not overlook the importance of improving our apiary, both in appearance and real value. A coat of new paint on many hives will add much to their general appearance, and a few choice queens of some valuable strain of bees not related to those we have will often add many dollars to its real value. In this way, at a small expense we can make our business more attractive and profitable, each of which has much to do with our success; and when we can catch the fleeting thoughts of to-day and weave them into practical methods for to-morrow, then let us not stop but continue our work until, through the medium of our journals, they are given to the world for the help of man.

A SEASON'S WORK WITH SECTIONAL HIVES.

Swarm Control and Comb-honey Production; Why the Sectional Hive is Superior to its Older Rivals.

BY J. E. HAND.

[The reader should understand at the outset that the weather conditions mentioned in the subjoined article are those for *last* year, not this year. Mr. Hand speaks of the conditions of the season as they occurred in order that he may show how to meet those conditions. While the season this year is materially different, the principles here laid down can be made to apply just the same. The reader must keep clearly in mind that Mr. Hand's colonies are divided into three groups as explained in his article in the last issue, and as shown in diagrams on the following pages.—Ed.]

The fruit-trees are now in full bloom, and the happy hum of the honey-bee is sweet music to our ears, for the honey supply in some of our hives is getting rather low, owing to the immense quantities of brood that our mammoth colonies have been rearing of late, and visions of the possible sugar-barrel in the not distant future had begun to loom up before us; however, with favorable weather for a few days all our anxieties along this line will be dispelled, for our strong colonies will soon fill their hives with the rich nectar from the everywhere abundant fruit-blooms. As explained in the last article, our colonies are divided into three different classes of fifty each. The diagram, Fig. 1, shows one of each class.

The weather at this time is all that could be desired, and every thing looks favorable for a good flow of nectar from fruit bloom; and as our colonies are all very strong in bees we will place on each colony a super of

sections filled with foundation by our new process that we will explain in our next article. We do not expect to get any surplus honey from fruit-bloom, and our object in putting the sections on at this time is to get the foundation partly drawn out so as to get the bees at work in the supers at the very beginning of clover-bloom.

THE BAIT SECTION OF PARTLY DRAWN COMB NOT ADVISED.

Some advocate the use of 12-bait sections in each super to coax the bees to begin work in the sections. However, since such baits, when finished, are invariably off-grade, and

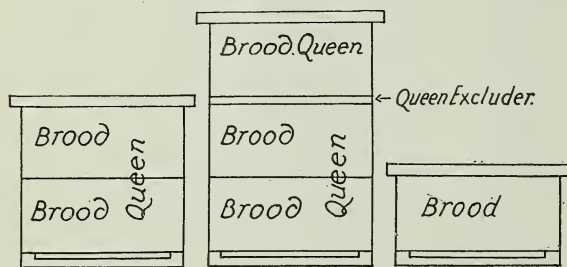


Fig. 1. This represents the apiary which consists of 150 stands divided into 3 groups as shown.

12 second-quality sections in each super would seem like rather expensive bait, we prefer to render our bait sections up into wax, and use full sheets of foundation freshly drawn out into combs during fruit-bloom by our mammoth two-queen colonies. With our extra-strong colonies, and our bees being accustomed to passing freely from one brood-section to another of our hives, no coaxing is necessary in order to get our bees to begin work in the supers. This is the least of our troubles.

May 30.—Fruit-bloom is over, and our bees have put in good time. Our extra-strong colonies have stood us in good stead, as the hives are all well supplied with honey, which, together with what they will gather from locust-bloom and tulip or poplar, will keep up brood-rearing finely until clover blooms, which will be in about two weeks. We will now remove the supers of sections. We find that we have got 150 supers in which the foundation is more or less drawn out. This will give the bees a fine start when clover opens.

PUTTING ON FIRST EXTRACTING-SUPERS INSTEAD OF COMB-HONEY SUPERS.

June 10.—Clover is beginning to bloom, but it has been very dry for a long time, and the outlook for a crop of clover honey is very discouraging; however, if we get rain soon we may even yet secure a partial crop of clover honey. As a little honey is being gathered we will place a super of extracting-combs on each of our hives, first placing on each hive a queen-excluding honey-board. Why do we put on extracting-combs if we are going to produce comb honey? Why not put on the sections at once? The reason is

this. Although the bees are gathering a little honey, yet there is not enough of a flow to warrant putting on the sections, and only the very strong colonies are making any gain, and bees are not yet building new combs; and, though they will store considerable honey in the extracting-supers, yet they would not do satisfactory work in the sections, and would only daub them with propolis, and gnaw holes in the foundation. Our reason for putting on the extracting-combs at this time is to coax the bees to store the honey above as fast as it is gathered, so that the queens can fill the whole brood-chamber full of brood, which they will quickly do since the fertility of the queens is in excess of the room in all our brood-chambers.

ALL BROOD AND NO HONEY IN THE BROOD-CHAMBER.

We want a brood-chamber for brood, and of such a size that the average queen can fill it with brood. If one can't do it we will use two, for our brood-chambers must be kept full of brood, and queens cost nothing, and brood-combs cost money. If we use a full-depth single brood-chamber of a size to develop fully the fertility of the best queens, as some advocate, the average queen will not be able to fill it; hence the brood-chamber becomes a store-house for honey, and swarming and poor work in the sections is the result. The most satisfactory work in the supers, as a rule, is done by the colonies that store the least honey in the brood-chamber. If we would get the best work that our bees are capable of doing we must keep the brood-chamber practically free from capped honey. This is also right along in line with perfect swarm control.

We will now go to our cell-building colonies and get a batch of queen-cells which we will place in West cell-protectors, and push down between the combs of our 50 nuclei, and also of the two colonies that were queenless.

June 25.—The bees have been storing a little honey in the extracting-combs right along, but not enough to warrant putting on the sections. We have had no rain during this month, and every thing is pretty well dried up, and we have given up all hopes of even being able to put on the section supers before basswood blooms; however, the basswood-trees are loaded with healthy buds that bid fair to open at an early date, and we are yet hopeful of being able to secure a little surplus from basswood. This is our last resort, for we do not get any surplus from fall flowers in our location, and we consider ourselves in luck if our bees gather enough from this source to carry them through the winter.

Our three-deckers at this time are fairly boiling over with bees, and the extracting-supers are nearly full of honey, and the brood-combs are whitened a little along the top-bars, which tells us to be ready with the section-supers at the opening of basswood-

bloom, so we will bring out the section-supers and pile them up in the apiary so that we can put them on at short notice. Although our three-deckers have an inch block under each of the four corners of the hives, and a half-inch piece under the back end of the covers with a good shade-board over every hive that is at all exposed to the sun, yet the bees of these hives are hanging out on the outside of the hives; and as our other colonies are bunching out we will tip them all up and put an inch block under each front cover; also a half-inch block under the back end of the cover.

July 2.—We have had a fine rain, and the bees are beginning to work a little on bass-wood-bloom; and, although it is nearly dark, yet the bees are leaving their perches on the outside of the hives and making a bee-line to the timber.

July 3.—We were out at half-past four, but the bees were out before, and the droning of the heavy-laden bees gladdened our heart

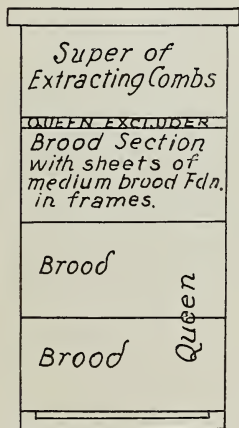


FIG. 2.

and filled with eggs. See Fig. 2.

PUTTING ON THE SECTION-SUPERS.

We will now go to the 50 nuclei, all of which at this time contain laying queens, and remove the covers, placing on each hive a queen-excluding honey-board, after which we will go to one of the 50 two-queen colonies, and remove the extracting-super, which is now full of honey, and with our hive-lifting device, to be described later, quickly swing the hive clear from the bottom-board and place directly on the bottom-board the extracting-super full of uncapped honey, and drop the hive back in position now on the extracting-super. We will now remove the top brood-section with the queen, placing it on one of the nucleus hives having the queen-excluder in place and put on the cover. We will proceed in like manner with the other 49 colonies having two queens, after which we will place on each of these colonies a section super of drawn foundation that we had started on fruit-bloom, first removing the top

brood-section after driving the bees down, so as not to get the queen, and place the queen-excluder on the lower brood-section, and on this place the section-super, and on the top of the section-super we will place the top brood-section, thus placing the section-super in the center of the brood-chamber, where the bees will immediately begin work on the partially drawn combs in the sections as shown in Fig. 3.

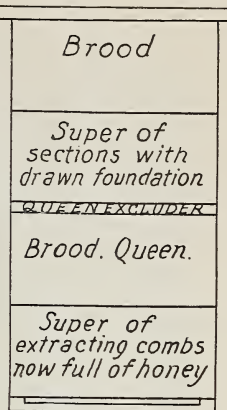


FIG. 3.

Why did you place the extracting-super full of uncapped honey below the brood-chamber? It is pretty generally understood by those who are at all familiar with the habits and instincts of bees that they will not allow honey to remain for any length of time below their brood. Taking advantage of this instinct of the bees we place the extracting-supers full of uncapped honey below the brood, knowing that such honey will be quickly removed and placed above the brood, which in this case will be in the sections, since the top brood section is full of brood clear to the top-bar, it having been up to this time the bottom brood-section.

HOW AND WHY THE SECTIONAL HIVE IS SUPERIOR TO THE OLD-STYLE ONE-BROOD-CHAMBER HIVE.

Reader, compare this with other methods in which the honey is placed at the sides of the brood-chamber. Although bees will quickly remove any and all honey that is placed below their brood, yet they are often very loath to remove honey from the sides of a deeper one-brood-chamber (especially is this true of the Italians), since bees always store honey at the sides of the brood but never below it.

This proves the truth of our statement in a former article, that the manipulations of the sectional hive enable the apiarist to turn the instincts of the bees to his own account in solving the most perplexing problems of successful apiculture. Compare our lightning methods of hive manipulations with the old-fogy methods of handling brood-frames and dummies! What is your opinion regarding the expediency of building up a colony of bees by adding one frame at a time, and closing up each time with a dummy? Have you seen any place anywhere in any of our manipulations where it would have been at all desirable to handle brood-frames? and have we not proven thus far that the handling of brood-frames as a business is a waste of time and energy, not mentioning the disturbance of the bees caused by overhauling the combs every little while, and often improperly spacing them? We are telling you

just how our apiary was worked during the season of 1906 as nearly as we can tell it from memory.

Birmingham, Ohio.

SOME YORK STATE BEE-KEEPERS.

Fourteen-frame Hives for the Production of Extracted Honey; Reducing the Swarming Tendency.

BY D. EVERETT LYON,
Field Correspondent for Gleanings.

Just across the Hudson River, not far from the Catskill Mountains, is the town of Hudson. Residing here is one of the up-to-date bee-keepers of New York — James McNeill, a man who is fully abreast of the times.

His home apiary, consisting of about 300 colonies, was a model. The grass was cut,

and sweet clover, with a slight trace of basswood. I can certify to its rich ripe flavor, for I sampled it liberally.

At the time of my visit Mr. McNeill had already extracted over 17,000 lbs., and the prospect was for about 25,000 lbs. in all, and that in a not very favorable season.

I was not surprised to find that Mr. McNeill, after much experimenting, was beginning to put his colonies into 14-frame hives, using the standard frames; and there is no denying the fact that these big hives do certainly produce the goods, and are not as much inclined to swarm.

I was much impressed by the fact that, in several yards I visited last year, many bee-keepers who were producing extracted honey were inclining more and more to larger hives.

With the Ferris plan of two queens in a hive before the honey-flow, in these large



FIG. 1.—JAS. MCNEILL'S APIARY AT HUDSON, N. Y.; GRASS ALL CUT, AND HIVES ARRANGED IN ROWS.

while the hives were arranged in order by rows, as seen in Fig. 1, all being run for extracted honey, and producing an average of 75 lbs. per colony.

Mr. McNeill began bee-keeping in 1880 with two colonies; and, though busy with other lines, of course, he has kept increasing his colonies until at the time of my visit he had about 450 in three different yards.

The opening of last season found him with 275 colonies, which had been increased to 450; and it was his intention to continue increase further until the number should reach 500 or 600.

Although located near Albany, Mr. McNeill's bees have access to little or no buckwheat, the principal crop being from white

hives, there are possibilities in bee-keeping yet to be realized.

Mr. McNeill is an ardent Prohibitionist, being the county chairman; in fact, there was a meeting of the county executive committee at his house at the time of my visit.

Rye, N. Y.

DO NOT SPRAY BLOSSOMS.

BY PROF. H. A. SURFACE, STATE ZOOLOGIST
OF PENNSYLVANIA.

Occasionally we hear of persons spraying blossoms, and are surprised to know that, in this time of advanced knowledge concerning spraying and fruit-growing, any person who



FIG. 2.—A PART OF MR. MCNEILL'S APIARY IN THE ORCHARD.

owns only a single tree would be so blind to his own interest as to attempt to spray that tree while in bloom. The first and primary reason for not spraying while in bloom is that the spray liquid is quite liable to fall upon the very delicate and tender pistil, or

central part of the flower, and destroy it. Thus it would kill the young fruit, just as would severe frost coming at the same time.

If the person should anticipate a crop of fruit that would be entirely too heavy, and should desire to thin it, he might use the spray-pump to aid in so doing, but this would be a very undesirable and inadvisable method of attempting to thin fruit.

The second reason for not spraying while in bloom is that, by so doing, the bees and other insects which are depended upon to carry pollen from flower to flower are liable to be killed by such spray. At the base of petals or showy parts of a flower are the nectar-glands for the purpose of secreting nectar and attracting insects of various kinds. Their function, in turn, is to carry the yellow "flower dust," or pollen, from one flower to another and thus insure cross-fertilization. In many flowers there are conditions by which self-fertilization is entirely impossible, and no seed nor fruit would be produced were it not for the agency of such insects as the bees. Thus, even if a person be not a bee-keeper, it becomes quite important for him as a fruit-grower to preserve the bees that are flying about the blossoms of the fruit-trees, and avoid any action that might destroy them.

The third reason for not spraying while in bloom is that there is no pest for which to spray at this particular time. It is too early to spray for the codling moth or curculio, and there will be no decidedly beneficial results to come from spraying at such time. It is by all means best to wait until just after the petals or showy parts of the flower drop, and then spray with the Bordeaux mixture,

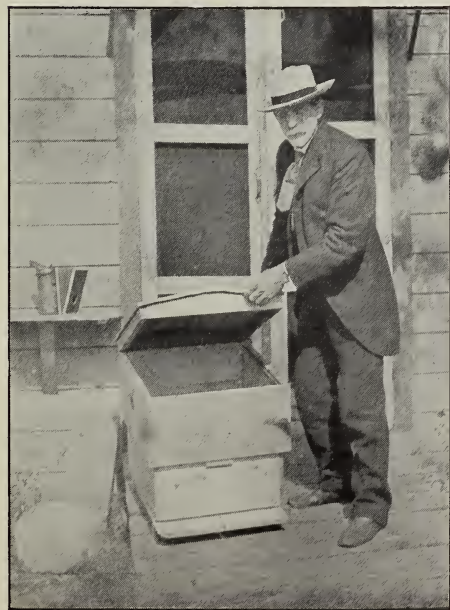


FIG. 3.—MCNEILL'S LARGE HIVE HOLDING 14 FRAMES OF LANGSTROTH SIZE.

to which is added Paris green or arsenite of lead. The Bordeaux mixture is made by dissolving four pounds of bluestone or sulphate of copper in fifty gallons of water, and adding six pounds of lime, slaked, and made into a milk of lime and strained. To this fifty gallons of the Bordeaux mixture add either one-third pound of Paris green or two pounds of arsenite of lead. Spray well over the trees just after the blossoms fall, and you will kill the codling moth, which is the insect that causes the wormy quinces, pears, and apples, and also the curculio, which punctures plums, cherries, and other fruits. Repeat this spray in about ten days, and no other spray will be necessary for the codling moth.

Harrisburg, Pa.



FIG. 4.—A LARGE WELL-MADE SOLAR WAX-EXTRACTOR IS A NECESSITY IN ALMOST ANY APIARY.

BEES IN A CITY A PLEASURE AND A PROFIT.

Honey for Home Use.

BY CORA JUNE SHEPPARD.

Our reason for keeping bees is that in these days of adulteration we wish to produce on our acre of land all that we eat. To get things fresh from nature seems the only way to get pure food.

When the snow was still on the ground last winter, my husband purchased two old box hives full of bees. The price paid was \$3.00. A northwest windbreak was made for them (Fig. 1), and we commenced to read every thing that came our way which related to bees. By May, the month for swarming, we felt confident to care for the swarms the old hives would send out. Two new Danzenbaker hives had been purchased, and the bees were eagerly watched. At last

the swarm came forth and alighted on the apple-tree over the hives. A limb was soon sawed off and the bees carried to the new hive (Fig. 2). It was the work of a very short time.

A swarm in May is worth
a load of hay;
A swarm in June is worth
a silver spoon;
A swarm in July isn't
worth a fly.

We felt rich to have ours swarm in May. A few days later the other old hive sent out a swarm, and they likewise settled in the old apple-tree. Swarm number two was also easily captured. Then we felt rich indeed, with four hives of bees working early and late to fill our larder for the win-

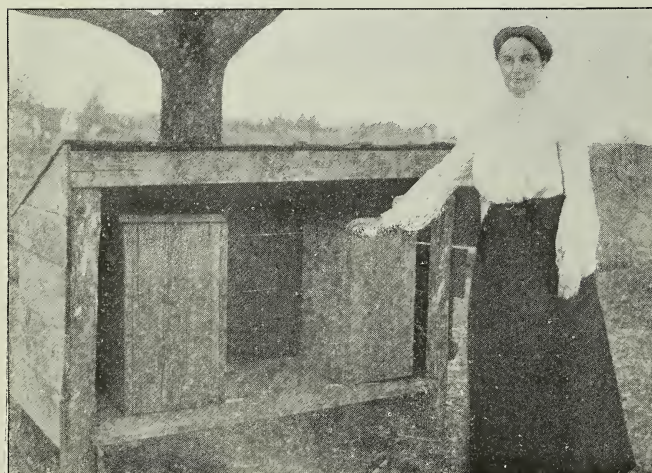


FIG. 1.—NORTHWEST WINDBREAK OVER BOX HIVES.

ter. In ten days supers were placed on the new hives, and when they were filled we protected ourselves with veil and gloves, and, armed with a smoker, took up the honey. There is now a large supply put away for winter use.

Shiloh, N. J.

CLOVER.

Why it Does not Always Secrete Nectar.

BY JAMES M. PULLEY.

On page 1484, last year's volume, in your footnote to one of Dr. Miller's Straws you write: "It is not that nature is less lavish than she used to be in secreting nectar, but rather that there are too many bees for the pasturage," and so account for the fact that clover fails to yield a crop of honey in localities that have previously given satisfactory yields.

My own opinion, based greatly on observation, is that not clover alone but all other vegetation has favorable as well as unfavorable seasons in growth and nectar yield, and which I am not inclined to lay either to the lack of lavishness of nature or to the overstocking of a given territory as suggested by the editor, but to other causes.

First of all, and touching the question strongest, I would suggest that certain elements of soils have been exhausted by continuous cropping on one variety of crops—for instance, crops that produce *white straw* are known to impoverish all soils to a great degree, as are plants of the mustard family—so much so that, in the preparation of leases in several sections in England, a paragraph is inserted prohibiting the growth of a white-straw crop on the same land but once in four years, while certain other restrictions are placed upon the growth or cultivation of mustard. *White mustard* may be grown under certain conditions and restrictions, probably so as not to draw the rein too tight on the tenant, as this crop is a good paying one on light to moderate loam soils with experienced husbandry.

From the foregoing deductions it may be drawn that I consider it has been man's lack of method in treating the land under cultivation that has made the clovers and perhaps some plants probably less free in the secretion of nectar, which would seem to be borne out from the fact that, the longer land has been under cultivation and the influence of the white man, the less likelihood is there of being a flow of nectar from clover. This is particularly instanced by the scarcity of clo-



FIG. 2.—HIVING A SWARM IN DANZENBAKER HIVES.



FIG. 1.—APIARY OF M. E. TRIBBLE, MARSHALL, MO., SHOWING HOW GRASS AND WEEDS WERE KEPT DOWN BY FOUR SHEEP; HIVES ARE INCLOSED IN TAR-PAPER WINTER CASES.

ver honey in New England, or at least this portion of it, as we seldom get a yield of any importance from this source, even though the hives "boil over" with bees of the best kind.

To digress a little from bee-keeping to farming I will give about what is known in England as the "four-course shift" in agriculture, which is considered one of the most approved methods of maintaining the fertility of a moderate to heavy loam (such as we frequently meet in this part of New England).

1. White-straw crop—wheat, oats, or barley, seeded in fall with clover.

2. Crop of clover hay; soil to yield two crops in fall or spring.

3. Crop of roots—mangolds, turnips, or kohlrabis. The turnips may be fed off with sheep in fall, optional with tenant.

4. Fallow (or idleness), to allow land to recuperate.

If I remember rightly, the old Mosaic law provided that land should remain idle one year in seven. This applies to leased or hired land. Where the occupant is also the owner he may farm to suit his own fancy, just as freely as in the United States; but as so much of the English land is tenanted with leases of 7, 14, or 21 years, or perhaps longer, a method suitable to the locality or estate is usually laid down and lived up to. Be-

sides this, all hay, straw, and fodder must be consumed on the farms, *with all that means*, river valleys and other favored locations excepted.

Investigation would suggest that land that is short of lime in some form or other does not favor the secretion of nectar. Even some of our buckwheat-growers complain of certain land not secreting honey. The remedy appears to be to apply lime in some form, and a cheap one is sometimes found in gas lime, or the lime that has been used at the gasworks, when obtainable. The fall would seem to be the time for its application, and that it would be necessary to apply but once in a term of years, determinable upon cropping and results obtained.

Melrose, Mass.

SHEEP IN THE APIARY.

Valuable for Keeping Grass and Weeds Down; Some Views from Missouri.

BY M. E. TRIBBLE.

Fig. 1 is a picture of my apiary about ready for winter. Four sheep kept it clean of weeds without help. The hives are wrapped in tarred paper, with chaff cushions in upper story, and the entrance con-

tracted to $\frac{3}{8} \times 3$ inches. The Missouri Valley College Buildings are seen in the background.

Fig. 2 shows my honey crop for 1906 (net weight of 1300 lbs.), outside my house, tiered up secure from robbers. It is a great advantage to have nice-fitting supers.

Fig. 3 is a corner in my supply-house, designed to cause beekeepers to become more interested in producing a better quality of honey as well as to work on the appetite of the honey-consumers.

Fig. 4 is my extracting-house, which, to some extent, carries out Mr. Alexander's ideas. The best helper a beekeeper can secure is his own wife.

Fig. 5 is a picture of our little ones, designed to show the effect of honey as a food for children. I think any beekeeper can see that honey contains both health and happiness in this home, and it may do so in others as well.

I have made arrangements to secure for the Missouri Valley College a lot of insects,

such as hornets' nests, wasps' nests, yellow-jackets' nests, etc., next summer, for Dr. L. E. Griffin's class work. While this throws

no light on bee-keeping it was the greatest attraction we had at our State Beekeepers' convention.

Marshall, Mo.

[These little glimpses into the homes and surroundings of some of our progressive friends, even though they keep only a few bees, are highly interesting. Let us have more of these snap shots. Fortunately is the beekeeper who has a wife that knows how to handle bees as well as hedges. —Ed.]



FIG. 2.—M. E. TRIBBLE'S CROP OF HONEY FOR 1906 TIERED UP SECURE FROM ROBBERS.

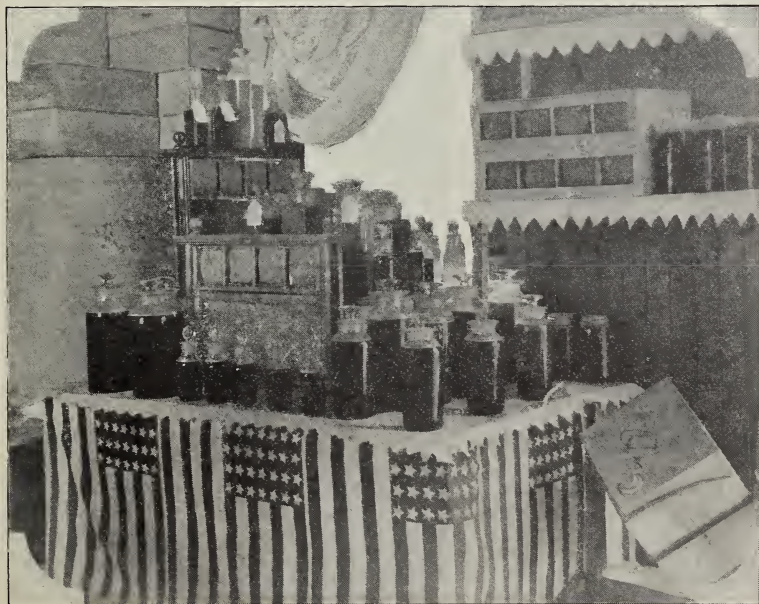


FIG. 3.—TRIBBLE'S PERMANENT HONEY DISPLAY FOR THE BENEFIT OF VISITORS.

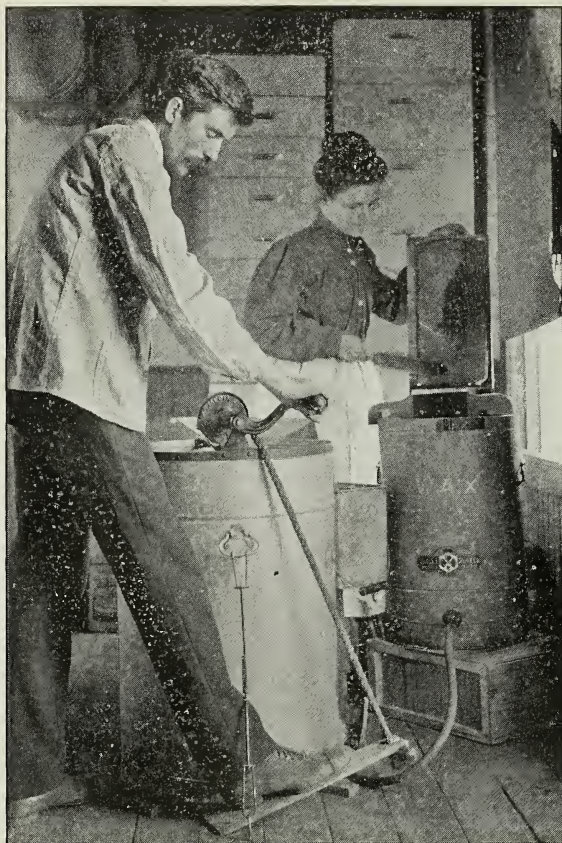


FIG. 4.—GERMAN WAX-PRESS USED AS AN UNCAPPING-CAN; HONEY RUN INTO TANK IN ROOM BELOW.

SAVE YOUR COMBS.

The Moth-miller not an Unmixed Evil; the Best Way to Circumvent the Evils of the Pest.



BY R. F. HOLTERMANN.

Every summer valuable combs—yes, even frames—or hives are destroyed by the larvæ of the wax-moth. I do not look upon the wax-moth as entirely an enemy to bee-keeping, as there is no doubt that they render harmless many a bee-tree, hive, or other repository in which the bees have built combs and in which the disease foul brood lingers.

When the farmer wishes to destroy a weed he studies its life-history and strikes at the vulnerable points. In the butterfly we have an insect which loves light and air—it is of the day. In the moth we have illustrated to us a creature in many respects the opposite of the butterfly. It loves darkness, quiet, it does not like a free circulation of air. In colder or more northerly districts the eggs, larvæ, and moth are pretty well destroyed by a low temperature. In other cases the ma-

jority of the eggs are saved in hives where the heat of the bees has kept it from being destroyed by the normally low temperatures. This being the case, as a rule the first combs which fall a victim to the bee-moth are brood-chambers in which the bees have died during winter or spring. How shall this be prevented?

Instead of doing as, years ago, I did, and as many instruct now, closing up the brood-chambers and supers, keeping the moth from entering as far as possible, I now let the air circulate freely through the combs, letting the light in, and thus making non-existent the favorite conditions of the moth.

Last year, owing to the failure of the white-honey crop with some 8000 combs, without a bee upon them for ten months, I did not lose one from the moth, but they were put in supers or hives with the bottom-board and cover removed piled up thus  under cover, and sun-  light indirectly and air directly given access to them. The combs were, of course, kept apart in each super or brood-chamber. This is the experience of other years, and to me the bee-moth is no longer a troublesome pest under such conditions.

I may say, however, that I sent out a dozen hives with combs having cover and bottom boards, and the entrances closed, all being



FIG. 5.—HONEY MEANS HEALTHY CHILDREN.

ready upon removal of entrance-blocks for colonies which had been bargained for. The majority of these combs were destroyed by the moth.

I am, of course, quite aware that pollen in combs adds to the danger; but even then, in our more northerly climate at least, the ravages of the bee-moth can be kept in check by exposure to light and air.

MIDDLESEX BEE-KEEPERS' ASSOCIATION, ONTARIO, CANADA.

The Middlesex Bee-keepers' Association had an excellent meeting at the City Hall, London, Ont., on Saturday, May 4, President F. I. Miller in the chair.

W. A. Chrysler, Chatham, gave an instructive address upon the subject "New Conditions Appearing in our Honey Markets." Mr. Chrysler thought that many produced a good article, but did not sell it to the best advantage. He considered that there was a great need of developing the home market. Honey should be put up in small packages, properly sealed and labeled. This would help to secure freedom from adulteration, and also save the cost of the wholesale package, which, as a rule, is of no value when emptied. Shipments to distant markets should be made in a coöperative way, and the work of marketing undertaken by a practical man who should be paid a reasonable sum for his work.

A committee duly appointed recommended, after deliberation, that members should report to the Secretary, E. T. Barnard, Lambeth, Ont., honey of which they wished to dispose in distant markets; that the honey should be put up in a uniform retail package, and that, if possible, a carload should be sent.

Winter reports varied very much. Mr. John McEwen gave the best report. Out of 200 colonies he had lost scarcely any. Mr. Holtermann's report gave a trifle higher percentage of loss. There were various other reports down to a total loss of 60 colonies. D. Anguish's loss was only 10 out of 180 colonies. The need of sugar-syrup stores, and early feeding and packing, or early setting into winter quarters, was very apparent.

Mr. McEwen gave an instance where, between apple-bloom and clover, he purchased five colonies of bees, moving them home a distance of four miles. Two days after, he received word that a bunch of bees as large as a man's hat had returned.*

Mr. McEwen also stated that he had not found it effectual, in the treatment of foul brood, to shake the bees upon combs of sealed honey. He had, however, found it effectual to feed clean colonies until they stored and sealed combs. The diseased colony was then in the fall shaken into a hive without combs, and left there until some bees starved to death, when the bees were shaken upon previously prepared combs.

*It would be rather interesting, in connection with the above, to test the difference in distance various colonies, blacks, Italian, Carniolan, etc., will forage by moving them longer and longer distances, seeing which will return to the old locality the longest.—R. F. H.

Flax shives were recommended for packing about hives in outer cases.

The apiarian report of the Ontario Agricultural College was read, those present thinking it the work of an enthusiastic experimenter in bee-keeping. It was thought that the work was of no value to bee-keeping when they found that the government was paying for the experiments.

It was then moved by D. Anguish, seconded by W. J. Robb, "That it is the sense of this meeting that, whilst we are desirous and anxious for experimental work in bee-keeping to be conducted at the Ontario Agricultural College, the work as now conducted is valueless, and that we ask that it be conducted by a competent bee-keeper in touch with the Ontario Agricultural College." Every member supported the motion.

The Department of Inland Revenue, Ottawa, was also asked to take annually, during the late fall or early winter, samples of honey, with the object of detecting adulteration. Besides those already mentioned, Messrs. W. I. Craig, Editor *Canadian Bee Journal*, and Arthur Laing were present.

FOUL BROOD IN THE TROPICS.

A Cure that has Some Features to Recommend it.

BY W. W. SOMERFORD.

I have been a reader of GLEANINGS since May, 1884, and am pretty certain that, in that time, I have read many articles on foul brood, besides some books on the same.

The method which I here present for the consideration of your readers is the McEvoy plan improved—a perfect and sure, and (best of all) a costless cure—one that puts money into a man's pocket instead of taking it out, and, when finished, leaves his bees in better condition than before treatment, as they will be cured completely, and stay cured—and if they don't? Well, then it costs nothing to cure them again. But that will not have to be done unless they catch it from some other apiary near by.

Fact No. 1 to remember and paste in your hat is that foul-brood honey must be boiled one or two hours; for any man who says that bringing it to a boil kills the germs of the disease misleads, to say the least, and just such a statement cost me a bee-ranch worth a thousand dollars. So you see I paid for my learning, and hence have no love for "scientific liars."

Fact No. 2—if you can find one real case of foul brood in your ranch, and it is a big one, there are twenty that you can't find that are very sure to show up in time. Time is all that is wanted—just time, as time lifts foul brood from one stage to another, and that is why we hear so much about different kinds.

Fact No. 3 is that foul brood runs in stages and works according to ages; that is, the violent forms are reached after the disease has accumulated age and force in action, and, after reaching the fourth year, it is so

terrific in its destructive power that no colony affected hangs on to a long lease of life as is the case with younger germs, they being less destructive.

The proper way to treat foul brood for its sure and speedy cure is to begin as follows:

First, see that the brood is evenly divided in all colonies that are to be treated, and also the strength of the colonies evened up at the start.

Next, see to it that all have ten or fifteen pounds of honey to the hive; if not, feed up to that amount, as feed is an essential part of the treatment.

Now catch and kill every queen on the ranch (or take them away to other ranches, but it generally pays to kill them).

Get your wax-cooking tank ready. I use a molasses-cooking outfit that takes a hundred gallons at a clip. Now you are ready for the slow process of pulling the combs out, which must be done every day—enough to give the bees all the feed that they can handle. The combs, when taken out at the rate of one a day to the hive, are set beside the hive for the bees to take the honey back for feed—feed from start to finish being an important part of the process.

Now, on the fifth, sixth, or seventh day the cells should be grafted. I find that three cells to the hive are necessary, as not all of them hatch. My plan is to select from each hive one comb that has three or four fine cells started on them. Take out the old larvæ and introduce a fine-stock "fatted larva" into each cell, and push in a wire nail for a mark for each of the fine cells, while the comb containing the fine cells is placed, number two or three from the side of the hive, all taking the same place. Now the pulling-comb process goes on daily to keep up with the brood that is getting less and less every day, so by the fifteenth day you are feeding in empty frames beside the two or three combs that remain for the final shaking; and as the bees begin cleaning up as soon as their wax-pockets are full, the final combs to come out are cleaned up, and two or three new combs to the hive are started with bees just booming comb-building at the time of the final hatching of the queens (the final shaking day). By going over each hive carefully, enough pulled queens can be found to replace a few that are sure to fail to hatch on account of foul brood.

Bees shaken with *wax-pockets full of wax, and with queens just hatched*, will not swarm out—not over three per cent, if that many—and with stimulative feeding kept up for three weeks your apiary is in better condition than you ever before had one in your life; in fact, you yourself will be astonished at the way they do business, and all will have pretty clear and clean brood.

The above remedy is no theoretical illusion, but an actual fact—sure cure for foul brood, as well as a costless remedy.

I say "fatted larva," as I know it is impossible to get first-class queens from larvæ that have been fed the *common worker-bee*

pap. I use the "fatted larvæ" to transfer for fine queens, and fatten them by giving a few eggs, and eggs only, to strong colonies that are broodless and queenless, so that the eggs from the very start will have only the *royal-jelly* food; and, there being only a few eggs given to the hive to feed preparatory to transferring, I get a floating larva that is not *stuck* to the bottom of the cell, and is not injured in the transfer; and queens—well, they are as good as Henry Alley's best, and who can raise better than from the egg—the only way? Your old hive is as good as any, as hives do not carry disease.

Caimito, Cuba, Feb. 20, 1907.

[Our correspondent does not say that he melts up the combs as fast as the bees remove the honey from them, but he leads us to infer that.

He states that the combs are taken out one by one, one from each colony, and set down beside the hive. Assuming that there is disease in *some* of the combs so removed, and no disease, we will say, in a half or two-thirds of the colonies, would not such an indiscriminate setting-out of the combs be the means of spreading foul brood from infected combs to healthy colonies through the agency of robbing? Perhaps our correspondent would answer by saying that, in the end, he would clean up all vestiges of disease, even if it were so communicated.

Let us assume a case. Here is a colony that is known to be diseased. A comb from such colony is removed and set beside the hive. Robbers from healthy colonies carry a good quantity of the honey to their own homes. Let us assume, again, that some of it will be stored in new empty frames, and covered over with good honey. Buried up where it would be a source of reinfection it will sooner or later recommunicate the disease. Perhaps we do not fully catch hold of the method of treatment; but as our correspondent is very enthusiastic about the method we are glad to place it before our readers.

We will say this much, however, that the only way to eradicate foul brood completely from an apiary after it has once gotten a serious hold is to recomb every colony, melting up all the old ones, and putting in their place clean combs containing foundation, preferably full sheets.

Years ago, when we had foul brood all through our apiary, we had a continual fight with it for three or four years. It was only when we began the recombining process that we could feel we had a clean bill of health. If the combs are melted up as fast as they are emptied, and the work is done during odd hours when nothing else can be done in the yard, the cost will not be very great. The wax saved will just about pay for the foundation, and so the only cost will be the labor of recombining.

But if the old combs are crooked and otherwise undesirable, the labor will be covered by the better quality of the new combs, to

say nothing of the complete emancipation from disease.

As we are selling bees and queens we keep up the process of recombining, fumigating hives, buildings, and utensils, with formaldehyde; and all articles that can be subjected to a hot steam bath are given a good thorough steaming. This is done every year.

The main feature of the Somerford method involves this scheme of recombining and of feeding, which feeding puts the bees in so healthy and prosperous a state that they are able to ward off disease.—ED.]

UNCAPPING-COMBS.

A Properly Constructed Uncapping-can; Heating Knives.

BY C. W. DAYTON.

While I am waiting to hear some discussion from others on the question of honey-knives there will be time to look into the matter of uncapping-utensils. The Dadant can is all right for 50 to 75 colonies, except that it does not permit of the feet of the operator extending under it, and on this account the workman is compelled to remain at a distance from the can. This is a fault which needs correction. It is, indeed, restless to lean forward against the cappings-receptacle, and it is especially the case where there are many hours of steady work. Where the outside helper has bent over the hives a long time in taking out combs of honey, and feels as if a seat would rest his weary self, if he can help uncap and lean against the uncapping-can it is as good as half a seat, and a little longer space of time will give sufficient restfulness.

A capping-can should be at least 26 inches in diameter, so that two persons can work. For 200 to 300 colonies it should not be less than 34 or 35 inches in diameter. It needs that size for two persons working steadily. I know that they can get along with more cramped conditions for a while at first. But a larger can costs but a few cents more, any way.

There are a great many large wooden boxes in use in this State which ought to be pitched out of the back door, but a round, convenient metal box instead, having a nicely fitting cover to keep out flies, bees, and vermin when not in use. Such a one I have had in use for the past ten or fifteen years, and I know all about its advantages. Such a capping-can I have pictured, exactly as mine is.

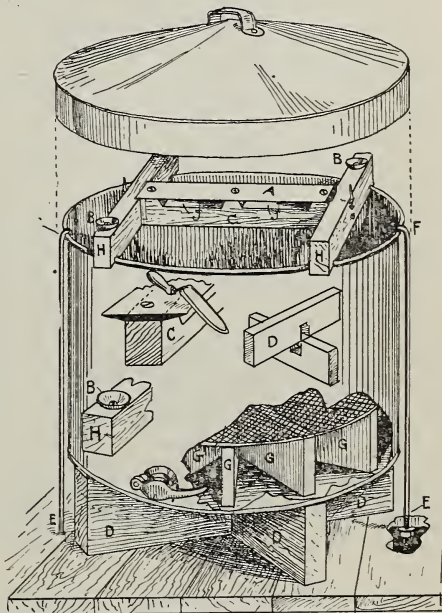
C is a cross-arm 2×2 inches, or 2×3 or any other size desired, by 20 in length, shouldered and mortised into the two shorter cross-arms H H.

Fastened on C is a strip of hard steel 2½ inches in width and 20 inches long, and beveled on the under side of the edges to clean the honey-knife of honey, which sticks closely. This is the kind of steel used on a wagon-spring, but hardened. It should be very hard,

like the knife of a card or paper cutter—those which cut with a square edge.

To hold the comb in one place, a small cup, B, is utilized. The end of the top-bar is thrust into it, and the comb can be whirled about while uncapping. The cups I use are of metal, the same as broom-makers use in the hollow of the hand to thrust the needle through the broom. A hole is drilled for the nail as shown. I is a bent projecting wire, for the far side of the frame to swing against while it is being uncapped.

J J are open spaces beneath the strip of steel A, for the free movement of cappings as they are scraped from the knife.



DAYTON'S UNCAPPING-CAN.

D shows the boards as notched to make the stand or foundation for the capping-can to stand on. The boards may be 10 or 12 inches in width if the can is 24 inches deep, which will probably be found to be of about the best height for working.

A 10-inch space under the cap-can will admit of a pail or a five-gallon can being laid down on its side, and having a 3×3-inch hole cut in its side. The cap-can should be set to draining every evening, or during working hours, and the honey poured into the extractor where it will find its way into the tanks with the regular run of honey.

When cappings accumulate in the capping-can, and get in the way of the working, they are taken out and pounded down hard in a tank with considerable honey adhering to them. This keeps moths from working in the cappings until they are ready to have the wax rendered from them, whether it should be a year or several years thereafter. I leave the melting of the wax until there is plenty

of leisure time, and good fires in the kitchen-stove in winter, and there are plenty of bee journals and books to be read. Don't fuss with such things when there is plenty of outside apiary work, such as extracting honey or rearing queens, nor rob yourself of a good excuse to sit by a glowing hearth during a cold or rainy spell in winter.

F F are hooked $\frac{5}{16}$ -inch iron rods to hold the can in position. Smaller-sized rods are sometimes used, but $\frac{5}{16}$ is found to be as small as will give satisfaction. The nut at E should be provided with a good-sized washer, which is not shown. The upper ends, F F, are flattened.

G, G, G is a wood frame to support the screen that drains the cappings. It has eight "wings" instead of four. The screen is held up 3 inches from the bottom of the can.

The same sort of foundation is used under the extractor, but four of the rods are used, instead of two, as on the capping-can.

I would not be annoyed by having the extractor traveling about the room for one day, for the cost of these iron rods.

You can not realize the advantage of projecting a pair of long shoes permitting you to get close to your work under the extractor and capping-can until you try it. It reduces the labor about one-fourth, seemingly.

After the uncapping is over, the frame can be lifted off and placed inside the can. Honey-knives and other small utensils can also be put inside, where they will remain until the next year rolls round, and the whole outfit, with the cover on, can be set out of doors or in any out-of-the-way place. If it is to be set in the wood or wagon shed, corner-crib, or granary, it is advisable to set it out in the apiary with the cover off, for then the bees will clean it of honey very tidily. Then no dust or dirt will stick fast and dry to the inside.

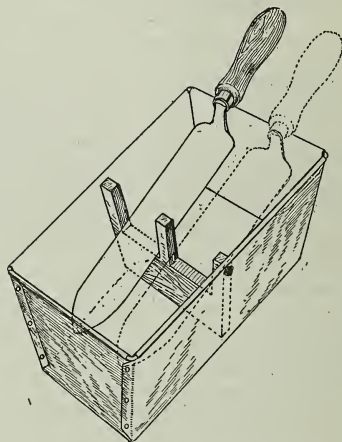
I have also made a honey-knife. Its length should be 10 $\frac{1}{2}$ or 11 inches; two inches wide near the shank, and tapering down to $\frac{1}{2}$ at the point. The Cogshall flat handle is "straight goods," and do not forget the nut on the handle. I can not find any one about here who uses more than the one bevel of the blade, so the other side would be more useful left square.

It will need a tank to heat the blade. This knife is for the professional uncapper, and heat is always of very great advantage. It nearly doubles the amount of work done. I have tried every thing, and charcoal seems to do best of anything when a cast-iron tank is used: if thin metal, then coal oil or gasoline. I can not do the knife-heater justice in one paragraph. In my opinion it is a very important affair. While it is not a very large thing, and one which *can* be got along without, I know from experience that the bee-keeper can putter along day after day with a cold or dull knife, and waste enough time and patience to afford a dozen heaters, or which time, if turned into smooth running apiary work, would amount to hundreds of dollars. There is room for a world of study

and experiment still open to the inventively inclined apiarist.

Even this capping-can I have illustrated can be set in a wagonload of bees on top of the hives of bees, or on the top of the hives of bees on a wagon to be hauled to out-apiaries, because the bottom is flat and smooth, while its height compared to its width makes it not top-heavy but steady, and it weighs but 30 lbs. I know of capping-boxes two feet wide and ten feet long that make two men a good lift, and yet these big boxes are not as facilitating in work as where the cappings are stored outside the extracting-house in another receptacle.

For the cappings, I use tanks holding 50 gallons. They weigh about 15 pounds, empty, and will hold the cappings from ten tons of honey.



HOW TO HEAT UNCAPPING-KNIVES.

Instead of taking a mess of cappings from the out-apiary home every night, and scattering them around in promiscuous receptacles where moths and dirt will be likely to get into them when the tank is used and the caps pounded down solid, the tank can be rolled into the wagon on a pair of skids, or even "ended" into the wagon and taken home all at once with the load of other out-apiary utensils and trappage.

The swarms and queens and main work of taking the crop is enough to think about at the time. It is work which can be done at no other time of the year. It is where all the profits accrue. If our minds are ever clear and untrammelled it should be at the time of the harvest. The more we consolidate our thoughts on single operations the better those operations can be performed. The more work there is that is arranged to be done outside the rush of the season, the more certain are we of success, because all of the work is better and more deliberately performed. More opportunities are discovered, and better take advantage of them. Success often hangs on very small threads in any business. But success is success, notwithstanding the narrow margin. Experience can

make the margin wider. Do not let one season's management be a repetition of the season before it. Improve. We enjoy life more when we learn to live it that way.

Chatsworth, Calif.

[Our correspondent makes a good point when he says an operator ought to be able to get close enough to his work so that his feet can be placed under the machine, thus allowing his body to come in contact with the bench or table, or (as in this case) the uncapping-can over which he is working. In this respect the Dayton outfit is admittedly superior to the Dadant; but from the manner in which many extracted-honey producers work we question whether the most of them would take kindly to this method of balancing the frame on the crosswise arm while uncapping. The great majority of them usually prefer a sharpened nail-point on which to pivot the frame while it is being handled over the uncapping-can.]

Then we question whether it would be wise for some bee-keepers to attempt to scrape the knife on a hard steel scraper rather than a wooden one. However, if one works carefully there will be no danger of dulling the knife-edge on the metal cleaner; and we can conceive how, when so used, it might be more satisfactory than a wooden device.

But the uncapping-box has one distinct advantage over any form of circular uncapping arrangement, in that it can accommodate a lot of uncapped combs preparatory to being put through the extractor. A great majority of the extracted-honey producers we have visited seemed to prefer an oblong box having just enough width to take in a frame that hangs on its regular projections; or, in other words, this width is the same as the inside length of the hive. The length of the uncapping-box may be any thing to suit the requirement of the producer. As fast as the combs are uncapped they are set down cornerwise; and if the uncapper can work faster than the man with the extractor, he has a place in which to put his surplus combs. The man with the machine can then pick them up as fast as he needs them; or where there is only one operator he can uncap twenty or thirty combs, set them up cornerwise in the uncapping-box, then extract them in twos, fours, or sixes, according to the size of the extractor.

The average uncapping-box is made so that one can get his feet under it the same as under the Dayton outfit here shown; and it can be made to have all the advantages of a circular can except the one of lightness and portability, with an additional advantage of its own—that of a reserve space in which combs may be temporarily placed.

The greatest objection to the plan of heating the uncapping-knives has been the lack of a satisfactory way of obtaining the heat. Ordinarily, to keep a fire going on a hot stove would prove a nuisance on a hot day, and the expense of keeping a gasoline-stove going continuously would be hardly warranted. A small one or two burner kerosene-

stove answers the purpose very well; but some sort of deep pan or tray is necessary to hold the water.

As a suggestion based on some ideas we have seen in use, we designed the apparatus here shown. The pan is 9 inches long, 6 wide, and 5 deep—the bottom being an inch smaller each way than the top. The notched division is made of $\frac{1}{2}$ -inch wood, and is held to the pan by means of a small screw through the tin into the wood very near the top on each side, as shown. This piece of wood should be sawed so that the grain will run vertically, in order to avoid the danger of splitting. The wood can be quickly removed so that the pan may be used for some other purpose if desired.

To use, fill the pan with water up to within $\frac{1}{2}$ inch of the top. This amount of water will last for a long time without getting sticky from the honey, and at the same time there is not so much but that it can be heated to the right temperature in half an hour, over an ordinary single-wick oil-stove.

With this arrangement there is no danger of dulling the knives, even if they are put in carelessly. One knife is left in the water while the other is being used.

Such a pan could be made at any tin-shop for a few cents, and the wooden part sawed or whittled out in a few minutes.—Ed.]



SODA AS A REMEDY FOR BEE-STINGS.

On page 88 you give remedies for stings. Out here, where cows and horses sometimes get a thousand or more stings in five minutes, I have used baking-soda. We first pour a pound or so into a pan of water, using all the water will dissolve, and more too. Then with a sponge or cloth put on the soda water, and rub it in well. It always relieves immediately. I tried it two years ago on the heads of two men who were caught while running a reaper. Horses and men were fearfully stung—the men all over their heads and faces. Soda water, good and strong, did the job for them in short order. Probably washing-soda would in case plenty of baking-soda were not at hand.

San Marcos, Cal.

G. F. MERRIAM.

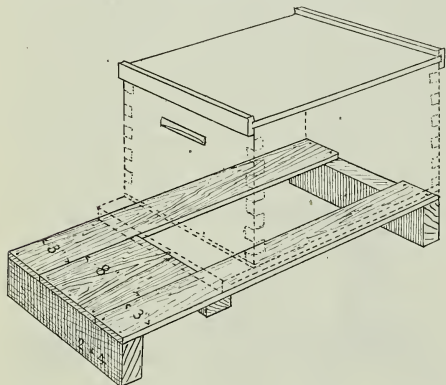
[Bee-sting poison is an acid, and soda an alkali, and the one would neutralize the other if you can get them together; but can you do this in the case of poison that has been injected into the flesh by a tiny hypodermic syringe? The orifice closes almost immediately, and it is very doubtful if any of the neutralizer gets to the right spot. Any liquid bathed over man or beast that is suf-

fering from one or more stings soothes by helping to reduce the congestion or fever to the parts incident to the swelling.—Ed.]

VENTILATED BOTTOM-BOARDS.

I notice in one of Dr. Miller's Straws, p. 1556, 1906, Dec. 15th issue, in speaking of a hive-foundation he objects to Mr. Stanley's on account of the moisture that gathers between the hive-bottom and the foundation causing rot. I have used the same thing and find the same objection, and it is more noticeable with us, for we never move our hives—they remain on the stands all the year.

In order to avoid the objection I make a different foundation as follows: I use a 2×4 at each end, as long as the hive is wide. On top of these I fasten a 1×3 at each end. These 1×3's I cut 30 inches long, which makes a foundation 6 inches longer than my hive-bottom. I now take a piece of board wide enough to fill in between the two pieces



of 1×3, and 6 inches long. Fasten one end of it to the 2×4, the other to a small strip fastened under the 1×3's as per the illustration. Now, by setting this foundation on the smooth ground many a load of honey will be saved that would be lost if the hive were so arranged that a nearly worn-out bee could not climb from the ground to the hive. I find they will frequently fall in front of the hive with a heavy load of honey, and wings worn out, but still able to walk.

Weaverville, Cal. C. H. NEWELL.

HOW TO PUT IN FOUNDATION ON HOT DAYS.

Last summer was very hot here, the thermometer standing at 90 to 95 almost all through our best honey season. It was almost impossible to fasten thin foundation in the sections, so I cut as many as I wished that day and placed them in cold water, taking them out as wanted. It worked like a charm. The water stiffens up the foundation. I use the Daisy foundation-fastener.

Junction City, Oreg. J. E. BARNUM.

[This is a happy suggestion. We do not remember to have seen it suggested before.—Ed.]

CLIPPING QUEENS.

Your advice, page 392, March 15th, to practice clipping drones before trying on queens is good, but I am afraid that, if a beginner should wait until drones hatch, he would be unable to find her.

Bethel, Wis. RUDOLPH MCCHESENEY.

[Where there are several colonies, a few drones are almost sure to be present in some hive in early spring. If the beginner has only one hive, let him practice picking up worker bees by the wings. True he may get stung before he acquires the knack; but this will be far better than maiming or killing a queen before he learns the art of clipping a bee or a drone.—Ed.]

BEEES CARRYING OUT CANDIED HONEY; FOLLOWS TOO LIGHT.

1. Did you ever notice your bees carrying candied honey out of the hive? I have two colonies that are busily engaged in carrying out the honey, which is in the form of small round granules.

2. I have so much trouble in prying out division-boards that I think they should be made heavier or of some stronger material.

Ersine, Minn.

J. A. BRANDT.

[When the candied honey becomes dry and hard, particularly if it is too cool or cold for the bees to go after water, they will often do this. In such cases give a feeder of water on top of the frames or in the hive where the bees can get at it.

Perhaps you have some of the old-style followers made of lighter material; or perhaps you allow the follower to come up tight against the side of the hive where the bees can glue it fast. It should *always* be placed in contact with the frame next to it with a bee-space between it and the side of the hive. When so placed your trouble will largely disappear.—Ed.]

THE HIVE-CARRIER VALUABLE ALSO AS A COMB-CARRIER.

The method of carrying bees out of the cellar at the Home of the Honey-bees, as illustrated on page 557, April 15th issue, was used by my brother and myself in 1880. We made the frame for carrying frames of honey into the extracting-house, and, when empty, back to the hives. For this purpose it is the ideal way until robbers take to it. Then a wire screen all over and under, with the top made in a frame with hinges, is all that is required to baffle the robbers. We also carried hives and wood on it, and other things that are to be removed.

Levita, Texas. J. W. GUYTON, M. D.

UNCAPPING-KNIVES WITH SCALLOPED EDGES.

I would suggest making those uncapping-knives, page 937, with scalloped edge, like those scalloped bread-knives. I have been using one of the latter for several years, and think they work well, using the same either with a drawing or sawing motion.

St. Louis, Mo.

HERMAN BETKE.



OUR HOMES

by A. I. ROOT

No chastening for the present seemeth to be joyous, but grievous; nevertheless, afterward it yieldeth the peaceable fruit of righteousness.—HEB. 12:11.

At one of our recent week-day prayer-meetings the topic was, "What has particularly impressed you in the life of Joseph which we have been studying in our Sunday-school lessons?" I replied that it was Joseph's remarkable faith that enabled him to take every persecution and trial as a part of God's plans to teach him new and important lessons, that impressed itself on *my* mind. Joseph, even in early childhood, was brought into *peculiar* trial. As soon as he was old enough to observe, he saw that his big brothers were not doing the "square thing." The question to his childish mind was, whether he should repeat to his father what he knew, and thus become in one sense a talebearer, or whether he should let it pass. We are not told very much about this, but we can read between the lines that his boyish sense of honesty and truth prompted him to report proceedings to his father; therefore when his father sent him out with a lunch and message to his brothers it is not so very strange that they regarded him as a spy and a talebearer.

The question often comes up to me, "Shall I make a disturbance in the neighborhood by trying to stop some things I know are wrong, or will it be wisdom to say nothing and just 'let the world wag'?" There are extremes both ways, of course, and we need to pray often that the Holy Spirit may guide us in this matter of standing up for law and order, and honesty and truth. Joseph was worried and troubled when they threw him into the pit; but one of his brothers, not long afterward, begged and besought them to let him go back to his father. They withstood all his entreaties, however, and were wicked enough, most of them, to let him die of starvation as they had planned. Some writer suggests that they sat down to eat the same lunch he had brought them, while he was helpless and left to starve in the pit.

Well, the remarkable thing about Joseph was that he was never discouraged nor put out. We are told indirectly that he was a *praying* boy; and while he prayed he set to work to bring about the answers to his prayers. Why, it would almost seem as if every persecution and hardship that befell him (through his wonderful faith in God and his tremendous activity) only opened the way to him for new wonders in the way of usefulness to his fellow-men.

There is a town out west that has been putting out advertising matter something like this: "Watch and see us grow." By the

way, I have seen at least two business firms who had that motto up in their stores. Well, Joseph was not one of the sort to advertise himself; but somebody who could take a birdseye view of human events might have said, "Watch and see the *boy* grow." What a tremendous growth the boy *did* make, any way! Why, he even eclipsed my Indian Runner ducks. (Let me say here, they are to-day just three weeks old, and the largest of them weighs 24 ounces—an increase of just double on the third week. Of course, this doubling and trebling in a single week can not continue very much longer; but I will try to report, and the rest of you can "watch and see us grow.")

It was a terrible blow to the lad when they threw him into the pit, proposing to let him starve. It might have been a little more hopeful, though more cruel still in some way, to sell him for a few pieces of silver to those Ishmaelite traders. Well, he soon attracted attention and made himself useful, without doubt. When he was turned over to some big man as a slave he grew in favor wonderfully—so much so that in a brief space of time his master made him manager over all of his affairs. Occasionally we find a character something like Joseph nowadays, but they are not very plentiful. Just this morning I took three small boys out of the factory to have them run behind the big roller and pick the stones off the field that we were fitting for corn. I thought it would be a treat to them to get out of the dusty factory into the open air this June morning. Very soon one of them wanted to know if they should not have better pay for that kind of work. I said:

"Johnny, haven't you learned that the best way in the world to get a raise in wages is to take hold with cheerfulness and vim any thing your employer happens to want you to do?"

He said he hadn't heard about that.

"Well," said I, "Johnny, there is one way in which almost any boy can be pretty sure of getting an advance in wages over the rest of the boys of his age, and that way is to let his employer see that he is glad of a chance to tackle *any* job that is a little harder and a little more difficult. Such boys always get promotion."

Johnny could not see the point, however. He shirked, and, I fear, he made the two other boys discontented and dissatisfied.

Well, after the loving Father had tested Joseph with hard knocks, and had seen how he held fast to his faith, and climbed over obstacles, he gave him trials of another sort. A handsome, dashing woman of rank, with power in her hands, took a sudden fancy to this remarkably successful (and no doubt good-looking) young manager. Then Joseph showed his loyalty to his master—the one who had trusted him with all his household, while at the same time he showed a wonderful and abiding faith in and loyalty to God. If I remember correctly the loving Father once said of Jesus, his only son, "Thou hast loved righteousness and hated iniquity; therefore

God, even thy God, hath anointed thee with the oil of gladness above thy fellows."

We are not told that Joseph received any such comforting words from Jehovah; but these very words might have been applied at this time. Now comes another trial. His faithfulness and his unswerving integrity sent him down to prison again, but that made no difference to him, or but little. He commenced at the bottom of the ladder once more. In fact, he was in some sense *used to it*, by this time. He "got busy," even there in prison, and followed it up year after year. He soon became the manager and trusted man of the prison. Why, that is just the way it was with him every time. No matter where he was put, up he went to the top in a comparatively brief period. He was a ruler among men, and a natural-born general. The very things that would have discouraged and defeated the majority of people served only to lift him up.

Now, friends, was Joseph an exception to humanity? Did God give him a better chance than the rest of us? or is it true that *we* shall be promoted and raised up, even above our fellows, if we are actuated by the same impulse and same spirit of faith in God that Joseph had? I think so. The boy I talked to this morning could not believe me when I assured him that a disposition to tackle jobs a little harder than usual would bring him promotion. There is only once in a while a boy or a grown-up man who gets a glimpse of this thing that came so naturally, it would almost seem, to Joseph, from childhood.

When the news of the earthquake that destroyed San Francisco went over our land a little over a year ago, while I admitted it was a terrible calamity I stoutly maintained that it was a part of God's plan to teach us all some useful lessons. Of course I could not, right away, declare what lesson it was that the earthquake was to teach us; but I believe you are now all aware that it did teach us several useful lessons. One especially is that a great city like San Francisco *could* get along under prohibition, and be a thousand times better than with wide-open saloons.

Every little while, some unprecedented and unexpected event is taking place. The present season for bee-keepers and farmers, and almost everybody else, is a break in the record of the weather. We are planting our corn this 19th day of June—later than I ever planted field corn before; but we actually could not do it with our ground in suitable condition at any earlier period. This unusual season is going to teach us some valuable lessons. I mentioned in our last issue the sudden and unexpected death of one of our office force, Mrs. Root's sister. I said again that this blow that had saddened all our hearts was sent by the hand of the kind Father, and that it should teach us lessons that we probably could not or would not learn without some such sad and startling trial. I do not like the word, exactly, but it gave our whole neighborhood a sudden "jolt"

and jar, different from any thing else that has happened. What is the lesson we are to learn when a loved one is suddenly called away? As I have prayed over it, some things begin to be made plain. We have been busy planning for the future. We have been making arrangements, taking it for granted, it would seem, that we are going to have a score of years or more to live. That is all right in one sense of the word; but in another it strikes on that text I have been talking about so much of late, that some of you may positively get wearied of it. I mean the one about "moth and rust." We are planning buildings and new homes. Just now Mrs. Root and I are talking about a little better home down in Florida; but are we at the *same time* laying up treasures in heaven? I hope so. God knows we are praying day by day that he will show us how to plan for something where moth and rust do *not* corrupt, and where thieves do not break through and steal. Then there is that *other* passage in the 55th chapter of Isaiah—"Ho, every one that thirsteth;" and then it goes on, "Come ye to the waters." Yes, the invitation reads, "He that hath no money, come." And then further along, "Wherefore do ye spend money for that which is not bread?" Of late I have been spending a good deal of money—I am obliged to spend it. I am consulted almost continually about the way in which money shall be used. God knows I am trying to use it in a way that will be a benefit to my fellow-men. I want to see it invested in that which is *real bread*, in the best sense of the word. Further along in that same verse we read again, "and your labor for that which satisfieth not?" A great lot of us are working hard during these long June days for something we wish to accomplish. Well, after we have worked and succeeded in getting that which we long for, can we look back and say, "Well, I am well satisfied with the results of my labor"? The women-folks work to get up big dinners; and I fear that sometimes the dinner on Sunday afternoon is bigger than on any other day in the week; and I admit that there *is* one sort of satisfaction in sitting down to a good dinner. I do not know whether the women-folks feel as if they might be put to less trouble or not; yet I hope they do *not* feel satisfied, and that we may all of us insist on something simpler, especially for a Sunday dinner.

When we come to face death, and look back over our lives, we shall probably find much to regret. In fact, I have talked with quite a number, when they neared death, on this very subject. Whenever some friend is suddenly taken away, I think of the chances I had to give him a pleasant word or a helping hand, and yet it was put off or neglected—perhaps crowded out because I thought I hadn't time.

A few days after my father's death I thought I would give almost all I was worth to have a chance to go and help him in some of the duties on the farm, just as I might have done a few days before. I remembered vividly

the last time I saw him at work, he was digging the early potatoes in the garden. Now, why didn't I get a fork and go out and help him—I who had written a whole book on growing potatoes, and yet had so much other business that I could not stop half an hour to help my old father while I visited with him? For days and weeks I thought of it; and it seemed as if it would make me happier than any thing else in the world if I could have that chance over again.

After Miss Mason, our former book-keeper, died so suddenly I remembered that I had promised to come around with my auto and take her out for a ride. Well, after her death I recalled that I went past her house the very day I expected to call, but *forgot to stop*. Her sister said she had talked about it, and was evidently looking forward with a lively anticipation to a little ride with her old friend and former employer; and I, in my stupid selfishness, forgot my promise until the chance of doing that little service was *gone for ever*.

Now, friends, such little unselfish acts are laying up treasures in heaven. If it costs you time and money, it is time and money spent for "bread" that "satisfies." I know, for I have tried many kinds of investments.

In conclusion, do you see this moral? The opportunities are now before you. There are dear friends all around you, on the right hand and on the left. In giving them a cheering word of encouragement, or in handing over to them something that is justly their due, you are laying up treasures in heaven instead of here on earth, and you are investing your time and money in bread that satisfieth; and may God help us to learn the lessons he is striving to teach us, even when it comes to "grievous chastening," as in the language of our text,



COLD FEET; THE "WALKING-BAREFOOTED-IN-THE-GRASS CURE;" THAT EARLY-BIRD COLONY.

We clip the following from the *Herald of Health* for June:

YOUR OPPORTUNITY TO BECOME STRONG AND HEALTHY.

If you are ill in any way, take the Kneipp barefoot cure, which consists of walking in the dewy grass for from 15 to 45 minutes. This treatment, at first held up to ridicule, has become world famous, and has done more to perpetuate Father Kneipp's name than anything else. Phenomenal cures have been attained in cases such as rheumatism, gout, asthma, congestion of the head, cartarrh, headache, sore throat, and a host of minor troubles.

There is no better time for adopting this simple yet efficacious treatment than right now. If you have a lawn close to your house, get up early in the morning when the dew is still sparkling on the grass, and "when nobody is looking," and tread around over the delightful greensward for about fifteen minutes. This should be enough for the first treatment. You will be delighted with the glowing and exhilarating effects

that will follow this early morning treatment, and will become an enthusiastic disciple of it. If you are unfortunate enough not to have a patch of green near the house, get out for an early morning walk into the open country—out into God's out-of-doors; find a suitable field or pasture, and then, taking off your shoes and stockings, go in for barefoot walking with a vengeance. You will feel like a child again, and all the minor ailments that have been troubling you for so long will take their leave and be as things that were not.

The above is not particularly new, to me at least. I have been in the habit of practicing the same thing for years past, because it is the easiest and most agreeable way of bathing my feet, especially in the summer time. When you get through you have no towel and wash-basin to put away. You do not even need a towel to wipe your feet. Wipe them off on the clean grass, then pull on your stockings, even if your feet are more or less damp. It will keep them refreshed and cool during the day, especially in hot weather.

At half-past four this morning, June 19, I started out to take my foot bath, and wandered over into the apiary to see what the bees were doing. To my surprise I found one colony flying out of the entrance pell-mell. Others were coming in, apparently loaded, dropping down around the alighting-board. I called Mr. Wardell's attention to it, and he said that that colony was showing more activity than any other of the 300 or 400 the night before. He suggested it was because it was a swarm that had been hived only a day or two before. But to be sure this was the reason for the unusual vim and activity in getting out early in the morning, we went to several other colonies that were hived the same day, or nearly the same. But this one was ahead of every thing else in the apiary. When I began questioning about the queen they said they could not tell any thing about her, because they were unable to find what hive the swarm came from. Mr. W. further said our lamented red-clover queen first attracted attention in just this way. Her bees were at work and storing honey when all others in the apiary were doing little or nothing. But now to get back to the barefoot cure.

Mr. Wardell said his experience was much like mine; and where one makes it a daily practice he may carry it out even in cool weather. He said he had known people who carried it so far as to go out and scamper about while snow was on the ground; and, furthermore, that they claimed it was the very best remedy for those who are troubled with cold feet, for after you get in out of the snow, and get on some warm shoes and stockings, your feet will be nice and warm, and, furthermore, they will stay so all day. I should not wonder if there were something in this after all. It is probably along the same line with many people who are not happy simply because they do not know when they are well off. Give them a lot of *real* trouble, and after they are restored to their usual condition they will be quite happy and thankful.

Now, then, if you have never tried wading through the dewy grass, just get right at it.

Take the treatment before you go to bed at night, and another early in the morning. Spread out your toes and let the clover-heads (wet with dew) pull through between them. If this treatment does not make your feet sweet and clean, and make them feel pleasant all day long, your experience will be different from mine. Soaking them in hot water, and washing them with soap, does not come anywhere near giving the refreshing results.

Later.—I am sorry to be obliged to acknowledge, friends, that since the above was in print we have pretty good reason for concluding that this new swarm that was doing such a "land-office business" before any of the others were stirring, was simply sending bees back to the parent hive for supplies, the hive they came out of being very heavy with stores. This is the first case, exactly like it, I have ever met, but our Mr. Wardell says he has seen one transaction of the kind, where he pinned them right down to it, so there can be no mistake. So my fond anticipations of finding another \$200 queen are exploded.



SPROUTED OATS—THE \$5.00 SECRET, ETC.

The editor of *Poultry Husbandry*, in the June issue, asks Mr. C. T. Hatch, of Waterville, N. Y., who has been remarkably successful in his White Leghorn poultry-yards, to give him a write-up of the duties of one single day in his extensive and successful poultry-plant. From this very valuable report I clip the following in regard to sprouted oats:

At one o'clock in the afternoon each day the hens are given a feed of green oats. This food has proved itself to be for us a most excellent egg-producer. It serves as a green food all the year round, and the fowls are extremely fond of it. The way this feed is prepared is as follows:

Take a quantity of clipped oats and soak them in water for 24 hours. Then pour off the water and put the oats in a pile in an ordinary box which has holes in the bottom to let the water drain off. The oats are watered with a sprinkling-pot night and morning, using very hot water—the hotter the better. As soon as the oats begin to sprout we spread them out in the box to the thickness of about two inches, and still continue to water them night and morning. In about ten days or two weeks, depending upon how warm the room is in which they are kept, they will be ready to feed. When in the proper condition to feed, the sod will be about three to four inches thick, and the growth of the green feed on top of this will be about six or eight inches high. We feed a block about six or eight inches square of this to each pen of 25 fowls. I have been using this feed throughout the winter, and must say that my birds have never laid so well as this winter. We have averaged a fifty-per-cent egg production all winter long. This can be fed also to young chicks, although it should be fed at a time when the sprouts are an inch or two inches long. To keep the oats from growing into stalk as it grows in the field it is necessary to turn it once or twice a day.

This will make the sprout grow very long, and prevent the stalk from starting.

After this feed of sprouted oats we prepare the day's shipments, eggs for hatching, market eggs, and breeding stock.

The reader will probably notice that we have allowed no special time for watering the fowls. On the ordinary poultry-plant the watering of the fowls is a part of the work that is most tiresome and takes the longest time, especially in a big poultry-plant. To do away with this really unnecessary drudgery we have installed a watering system which provides running water in each pen. The saving in labor soon pays for installing such a system. We figure that on our plant the saving in labor amounts to between twenty and thirty dollars a month.

This afternoon feed begins at 4 o'clock, winter and summer. This consists of whole white corn scattered in the litter, what they will eat up clean before they go to roost.

We figure that our total monthly feed-bill, including beef scraps (coarse beef scrap is before the fowls continually in hoppers), grit, oyster-shells, charcoal, dry mash, and all, averages nine cents per laying fowl per month, as nearly as we can figure it.

The above account of the whole process of sprouting oats is more elaborate, and better, than that given as a secret in the \$5.00 book. At present writing I am unable to say whether friend Hatch got his information from the book or whether the author of the book got it from friend Hatch. That would not particularly concern us just now.

The above extract illustrates the folly and injustice of selling secrets. Our GLEANINGS readers are perhaps well aware that I have for years past been spending money in buying "secrets" in order to obtain valuable information in regard to different rural industries; and after paying out hundreds of dollars I can say, with our experiment stations, that nothing new or valuable ever comes to the world in this way. Our class journals and our good books very soon contain every thing that is valuable; and in this way thousands of people get information at an insignificant cost compared with the plan of buying and selling secrets. Let me give you some examples.

A man advertised extensively a recipe for artificial honey. He said it was equal to the best honey made by the bees, and could be produced for 4 cts. per lb. I sent him \$1.00, and found his great secret was copied from Dr. Chase's recipe-book.

Another man advertised a "natural-hen" incubator—in fact, he is still advertising it; but I believe he has some sort of patent on it, and advertises individual rights at \$2.00 each. You will get for your \$2.00 a single sheet of paper, with the idea of giving every sitting hen a little pen by herself (so that other hens can not bother her) such as has been described and illustrated in our agricultural papers for years past, and is in common use more or less by all up-to-date poultry concerns. These single sheets of paper could be sold at a good profit for ten cents. Of course, the vender puts a rubber stamp on his advertising matter, and says if you will remit inside of thirty days you can have all the secrets for just an even dollar.

There are still other books claiming to give wonderful secrets, but you must first sign a contract not to show the book to any one, and keep it out sight of the neighbors, etc. One such book claims to be able to tell

which are the laying hens, without the expense and trouble of trap-nests, etc.; but the Maine Experiment Station has carefully tested the matter, and they decide that there is no truth whatever in the so-called Potter system. Just a few days ago I met some poor hard-working people who had sent their money in good faith in order that they might tell which hen laid the most eggs, etc. My impression is, there are more swindles going on at present along this line in the *poultry* business than in any other rural industry.

Now, friends, when you are tempted to invest your hard earnings in some valuable secret, just send me the advertising matter and I will purchase the secret for you, and let you all have it free of charge. Of course, I realize that many times those who have experimented and worked hard have something valuable to communicate; but let this information be given in a decent-sized book. If you have discovered something valuable that the world does not know, your book will meet with a ready sale, and you will get your reward in a legitimate way.

In regard to the discussion as to how large a book one should get for 50 cents or \$1.00, I would suggest that such books be compared in size and finish with those offered by the O. Judd Co., who have for years past been giving us valuable information in regard to all rural industries through their rural publications, and new ones are constantly coming out, giving full details clear up to date of the progress being made in all rural and outdoor pursuits.

Temperance.

THE STAINLESS FLAG.

On page 1594 for last year I made a brief mention of Dr. Chapman's celebrated address at St. Louis, entitled "The Stainless Flag." Let me go over it again briefly. I heard the same address first in Columbus at the Ohio convention; but I was more impressed with it at the second hearing in St. Louis than at the first. Before he finished and waved the stars and stripes above his audience I felt that it was a second declaration of independence—a declaration of independence from the rum power. Somebody said the speech must be printed, and placed before the people of the United States. At this saying, away back in the audience, a gentleman arose and said that a lady near him would subscribe \$100 to have it printed, on condition that her name be not mentioned. Others followed, and I felt that I could no longer stay in the background. I thought of our new \$3000 printing-press just installed, and thought it might be made to help disseminate this wonderful address. I made some hasty figures mentally, and then announced that I would furnish 100,000 copies if the Anti-saloon League would see to it that they were put into the hands of people who would read them. There were bursts of applause and clapping of hands when the lady donated

\$100; but when I made my announcement the applause almost frightened me; and when Dr. Howard H. Russell got up and said my offer represented something like \$1000, the applause was deafening. I meditated for a while getting up and saying that I had made a blunder, but you can readily understand what a predicament I should have been in. I said to myself, "Well, old chap, you have 'put your foot in it' this time, sure, and there does not seem to be any help for you. You might just as well sit still, take your medicine, and trust in God to help you out as he has done a thousand times before, and look pleasant and happy." In just a very few minutes \$2500 was subscribed, including my gift; and before adjournment arrangements were made to have what we call "Stainless-flag Sunday," to be observed all over the United States on the sabbath before the 4th of July. At the present writing we can not tell just what has been done on Stainless-flag Sunday; but we have a lot of copies of this patriotic address ready to send out to anybody who has not seen one. Just tell us on a postal card that you want one, or say how many you can distribute *where they will be read*, and they will be mailed from our office free of charge; and may the Holy Spirit follow them wherever they go.

Just one word more. On the front page of the pamphlet is a picture of a boy holding up an American flag. Now, by some strange chance the picture of that boy is as correct a likeness of my grandson, Wynne Boyden, as any thing that photography can furnish. I do not know where they found the boy, nor where he lives; but the picture alone ought to stir up patriotic feelings in the heart of every father and mother in this land of ours.

TEMPERANCE PRACTICABLE ONLY IN "UNCIVILIZED COUNTRIES."

For many years the friends of temperance have been inviting saloon-keepers and liquor-dealers to come out in the open and present their cause; but so far I have never heard of one who would stand before an audience and make a plea for his business—that is, a *mixed* audience. Of course, we have liquor-dealers' conventions, etc. But it seems I am in better luck. The friend who writes the following letter not only pleads his side of the question, but he addresses me as "Dear Editor."

Dear Editor:—I wish you would take my advice and keep your magazine clean of such rotten, objectionable church and temperance lectures as you have been giving, as we all know that temperance is practicable only in uncivilized countries, while in a civilized nation like this it is of no value to a certain extent. If you are so anxious to push such lecturing, why don't you start a special temperance culture and keep your good bee paper free of such unnecessary sermons and temperance bosh? If all friends of bee culture were so unreasonable as you were to the *Leader*, and not tolerate such uncooked temperance matter in their journal that is evidently a prohibition periodical hidden by a good name in order to get a sale—let him that is without sin cast the first stone at T. Q. Solomon. May the Lord keep church and bee culture apart is my prayer.

WM. A. SCHEIFFER.

Merrimac, Wis.

Friend S., if it is really true, as you state,

that temperance is practicable only in uncivilized countries, I do not know but we had better pray God to save us from civilization.

In regard to discussing temperance in a bee journal, if you will turn to the first number of GLEANINGS you ever saw, or to any other number, you will notice it reads, "Devoted to bees, honey, and home interests." Now, if the matter of temperance does not come under the head of "home interests," then I shall have to confess that I do not know what does. I shall have to explain to our readers that I tried in vain so to punctuate the next to the last sentence that it would read smoothly, but I had to give it up. It is, however, clear that he objects to GLEANINGS because it is a "prohibition" periodical. In that you are somewhat mistaken, my good friend, although it *is* true I am working and praying, and have been all my life, for prohibition. The particular thing that the Anti-saloon League is working for is *law enforcement*. The most that I have written in regard to temperance has been in the way of exhortation to have the laws we have strictly enforced, instead of being trampled under foot as they are by the saloon-keepers.

I am glad to see you close by quoting scripture; but I do not quite see how I can unite with you in your prayer that the Lord would keep the church and bee culture separate. The one who leads the prayer-meeting usually, I believe, tries to make his prayer before that meeting one in which all may unite—at least in spirit if not with a good old-fashioned Methodist "amen." I shall have to confess that I do not exactly understand what you mean by praying that the church and bee culture may be kept apart, but I would recommend that our religion, whatever it is, be kept right along with us, not only on Sundays, but every day in the week, and especially when we are working with bees, particularly if those bees happen to be cross hybrids.

Now, dear brother, you did not say, "Stop my paper," and I am thankful for so much; but since I have explained to you that our journal is devoted not only to bees, but to all home interests also, may it be still kept going? If not, and you prefer, you can have your money returned; and whenever you or anybody else prefers to have it stopped, and the money returned, it will be done instantly if you will tell us so on a postal.

DUFFY'S MALT WHISKY ONCE MORE.

Some of our readers may have noticed the particulars of a walking-contest in Cleveland some time last fall. Mrs. Jane Edwards Root, who is 75 years old, won the race by walking 2½ miles in 26 minutes. The Duffy people, always on the alert to get hold of any thing that will enable them to find a foundation for their testimonials, got their eye on it and sent her a quart bottle of their whisky; and then by some hook or crook induced her to give them a testimonial recommending their whisky (so they claim), and

giving the general impression that it was because of the *regular use* of their whisky that she performed this great walking-feat. If, however, you will look over carefully the letter they print, you will notice she does not say she ever used the whisky or heard of it until *after* the walking-feat. Of course, they give a picture of Mrs. Root in their advertisement. It makes my blood boil every time I see one of these misleading advertisements; and when I saw they had gotten hold of an old lady who, no doubt, could be connected with us by the Root Genealogy, I felt as though it were adding insult to injury.

By the way, will somebody tell us why it is that the Duffy people keep right on with this sort of thing? We have been told several times by the papers that they had been enjoined from selling their cheap whisky without a license, and that *hereafter* they would have to pay a license just the same as any saloon-keeper; but they keep going right on with their "testimonials." Are we to understand that some *whisky* people are "immune," like some of the millionaires, and that they can break our laws and trample them under foot, and then laugh in their sleeves when we talk about interfering with their work?

WHISKY OR ALCOHOLIC LIQUORS FOR CONSUMPTIVES.

Inasmuch as the Duffy people and other whisky-venders are publishing testimonials and other matter that may induce even Christian people to resort to alcoholic stimulants, I have thought best to give an extract from a new book entitled "The Self-cure of Consumption," by Charles H. Stanley Davis, M. D., Ph. D., Member of the Connecticut State Medical Society. Here is what Dr. Davis says on page 56:

Nothing brings the patient more surely and quickly to the grave than alcohol. Alcohol has never cured and never will cure tuberculosis. It not only poisons the system, but it ruins the stomach and thus prevents this organ from properly digesting the necessary food. It impairs nutrition, the very function which, of all others, it is important, in consumptives to maintain at its highest integrity. The elimination of alcohol by the lungs, increasing the congestion of the bronchial mucous membranes, and thus enhancing the cough, is very objectionable.

THE United States Department of Agriculture has just issued a report of the meeting of inspectors of apiaries, which was held at San Antonio, Nov. 12, 1906. We do not observe any price attached to this bulletin, (79 pages), but we opine it is 5 cents, and should be obtained from the Supt. of Documents, Government Printing Office, Washington, D. C.

THE great Uncompahgre irrigation project is rapidly approaching completion. The Gunnison tunnel, six miles in length, is two-thirds completed, and the great South canal is almost finished. The tunnel alone will cost \$2,000,000, and the South canal \$750,000. The bee-keepers of Colorado ought to feel very grateful to their Uncle Sam for constructing this truly magnificent enterprise.

Well-bred bees and queens. Hives and supplies.
J. H. M. COOK, 70 Cortlandt St., New York City.

ITALIAN bees and queens bred for honey; price list free.
B. F. YANCEY & SON, Angleton, Tex.

FINEST Golden and red-clover queens, Caucasian and Carniolan.
DANIEL WURTH & GRANT, Pitkin, Ark.

ITALIAN AND CAUCASIAN bees and queens of best quality; price list free. A. E. TITOFF, Iamosa, Cal.

MAPLEWOOD APIARY.—Choice comb honey, Italian bees and queens. GEO. H. REA, Reynoldsville, Pa. R. 2.

ROOT'S SUPPLIES at factory prices; wholesale and retail.
ANTON G. ANDERSON, Holden, Mo.

ITALIAN BEES, queens, and bee supplies.
H. H. JEPSON, 182 Friend St., Boston, Mass.

ITALIAN BEES, queens, nuclei, and bee-keepers' supplies. A. T. DOCKHAM, Rt. 1, Box 95, Eagle Bend, Minn.

ITALIAN BEES, queens, beeswax, honey, and bee-keepers' supplies. M. E. TRIBBLE, Marshall, Mo.

FOR SALE.—Bee-keepers' supplies. Write for catalog. Lengst & Koenig, 127 S. 13th St., Saginaw, Mich.

FOR SALE.—Golden and red-clover Italian queens. WM. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

ITALIAN BEES and queens—red-clover and golden strains. E. E. MOTT, Glenwood, Cass Co., Mich.

SWARTHMORE Golden-all-over, Caucasian, Banat, Carniolan, Cyprian queens. E. L. Pratt, Swarthmore, Pa.

QUEENS. Free list giving safe method of introducing, ready Feb. 15. E. E. LAWRENCE, Doniphan, Mo.

ITALIAN BEES, queens, honey, and ROOT'S bee-keepers' supplies.
ALISO APIARY, El Toro, Cal.

FOR SALE.—Root's bee-supplies, wholesale and retail; factory prices; catalog free. Beeswax wanted.
W. E. TRIBBETT, Staunton, Va.

Improved Carniolans always winter best, breed up strongest early in the spring; the finest comb-honey builders. (Italians for those preferring them.) Catalog free.
W. W. CRIM, Pekin, Ind.

GOLDEN-ALL-OVER Caucasian Banat bees and queens. We book orders for early queens from our best imported breeding stock for honey, with 600 twin mating-boxes. THE SNYDER APIARIES, Lebanon, Pa.

QUEENS.—Improved Red-clover Italians bred for business; June 1 to Nov. 15, untested queens, 60c; tested, \$1.00 each. Safe arrival and satisfaction guaranteed.
H. C. CLEMONS, Boyd, Ky.

IMPROVED ITALIAN QUEENS now ready; nuclei and colonies about May 10, Danzenbaker or L. frames; 20 years a queen-breeder; 500 colonies to draw from. Circular and testimonials free.

QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio.

ANGEL'S GOLDEN BEAUTIES and his bright three-banded Italian Queens have but few equals and no superiors. A fine large queen of either strain for \$1.00; an extra select breeder for \$2.50. I have had 12 years' experience at queen-breeding. Address

SAMUEL M. ANGEL, Route 1, Evansville, Ind.



JAPANESE BUCKWHEAT.

We have a supply of choice Japanese buckwheat for seed at \$2.50 per bag of 2 bushels; \$1.50 per bushel; 85 cts. $\frac{1}{2}$ bushel; 45 cts. a peck, bags included; shipped by freight or express at your expense. By mail, postpaid, at 13 cts. per lb.

SECOND-HAND 60-LB. CANS.

We have on hand from 100 to 200 boxes of good second-hand 60-lb. honey-cans, two in a box. The cans are free from rust on the inside, and very little on the outside. The boxes are repaired and in good condition. We offer these in 5-box lots or over at 40 cts. a box; 25 boxes at 35 cts. a box; 50 boxes at 30 cts. a box. These prices are for shipment from Medina only.

HALF-POUND TUMBLERS.

In making up the two pages of honey-packages in our catalog this year we omitted the half-pound tumbler. We have these packed 32 dozen to the barrel at \$5.50 per barrel, or packed in partitioned cases of four dozen each, ready to reship when the tumblers are filled with honey, without additional packing; parchment or wax-paper discs also included; \$1.00 per case; 10 cases at 95 cts.; 25 cases or over at 90 cts.

BUSINESS IMPROVING.

Frequent showers and warm days are making ideal conditions for the secretion of nectar, and the bee-keepers who were careful to see that their bees were fed when needed throughout the long cold spring will reap a reward by having a strong working force of bees ready for the honey-flow now that it is at hand. The favorable conditions increase the demand for goods wanted at once. Our many branches and agencies are well supplied, and in position to serve you without delay.

A B C OF BEE CULTURE.

We want to hear from any dealer or other person having one or more copies of the last edition of the A B C of Bee Culture in perfect condition to dispose of. We shall need every copy available for orders before the new edition is ready in the fall. Several have already reported. Let us hear from others. The price of the new edition will be \$1.50 postpaid; \$1.25 with other goods by express or freight, and a corresponding increase in the wholesale prices. This is made necessary by increased size, better paper and printing, and consequent increased cost to produce the book.

FAULTLESS SPRAYERS.

This is one of the most useful little implements ever invented, and this is the time of year when it is needed to spray shrubs, plants, and especially potato-vines, to kill the bugs. It is also used as a kerosene sprayer on cattle to keep off flies. They are so cheap that you should have several, each loaded with the different mixtures needed for various purposes. We have some 20 to 30 dozen, which we offer, to close out, at 27 cts. each; three for 75 cts.; \$2.50 per dozen, made all of tin. With galvanized iron tank, 35 cts. each; three for \$1.00; \$3.50 per dozen. We could not replace this stock to sell at these prices. Some of our dealers also have a supply on hand.

ONE AND FIVE GALLON CANS.

We have an extra large stock of one and five gallon cans which we offer, to reduce stock, for shipment from Medina only, at the following prices: One-gallon cans, with $1\frac{1}{4}$ -inch screw-cap, \$10.00 per 100; 500 or over, at \$9.00. Packed 10 in a case at \$1.30; 10 cases or over, at \$1.20. Five-gallon (60-lb.) cans packed two

in a case, 75 c. per box; \$7.20 for 10 boxes; 25 boxes or over at 70 cts. This offer is for only a limited time to reduce stock, and you should mention it in ordering.

Bee-keepers and others in the vicinity of the points named below can secure bargains in colonies of bees by addressing the parties named, from whom full particulars can be obtained:

Geo. H. Rea, Reynoldsville, Pa.
Louis Fuelling, Mt. Vernon, Ind.
John H. Wagner, 425 N. 8th St., Beatrice, Neb.
D. W. Switzer, Roebuck, S. C.
J. C. Stewart, Hopkins, Mo.
Sebastian Iselin, Stockton, Cal., R. D. No. 2, Box 11.

We haven't full particulars regarding the bees offered in each case; the parties desiring to purchase should make inquiry for themselves.

Special Notices by A. I. Root.

THE M. CRAWFORD CO., CUYAHOGA FALLS, O.

For years past, Matthew Crawford's name has been almost a household word for nice strawberry-plants; and although I have had plants from him more or less almost every season, I never yet saw a poor plant sent out from his place. A few days ago the women-folks were wishing I would get the strawberry fever again, but it was toward the last of June, and most plant-growers would say it was entirely too late to ship plants. By the way, let me say right here that I have planted strawberries, and *made them grow*, every month in the year, here in *Ohio*; and I told friend C. that if he would send me a few plants, even if it was near the 4th of July, I would guarantee to make them grow. Well, what do you think? On this 21st day of June I have just opened a package of about the handsomest strawberry-plants I ever saw, and that is just the way they do business. The plants are not only always first class, but they come right straight back as quick as your order can reach them and the plants get back to you. I hope his boys will continue to keep up the splendid reputation that the veteran strawberry-grower, their father, has enjoyed all his life.

PAULOWNIA IMPERIALIS.

The tree that made the enormous growth of 16 feet from the ground in one season a year ago we had given up for dead. It stood the winter, but the repeated severe freezes during the spring seemed to have done it up. The boys were begging to pull it up and throw it away, but I told them to hold on, as it might start up from the root. But finally, when June came and it showed no sign of life, I lost hope; but I had one of my pleasant surprises this 25th day of June when I saw two great sturdy shoots nearly a foot high. They came up so quickly (near the root) it seemed almost like a mushroom in the night. Do not be in a hurry to pull up your things and throw them away. I have several times seen different kinds of fruit-trees pulled up, only to discover a big healthy sprout down under the ground; and if you once pull it up the chances are that it can not be put back so as to be a success. Now, this paulownia has probably got all of its roots, and it seemed when I took a look at it just now that it was saying, "Just watch, and see us grow."

PROFITS IN POULTRY-KEEPING SOLVED; THE \$5.00 POULTRY-BOOK.

We are in receipt of the new and complete edition of the \$5.00 poultry-book. It has substantial cloth covers, is printed on fine paper, and contains eleven more pages than the former edition. While this is quite an improvement over the old one, it yet lacks suitable engravings to make plain the construction of the simple poultry-houses, etc. It is true the book is fairly well illustrated; but the illustrations have no particular reference to the chapters of the book. For instance, he describes making self-feeding hoppers; but for the life of me I can not understand it so as to make one myself without some sort of picture to make it plain. There is one cheap picture of a poultry-house, and two diagrams. These are the only helpful illustrations I find in the book. As I understand it the book is sent you for \$1.00, and you can pay the other \$4.00 when you are satisfied it contains matter of enough value, different from any other in print, to make it worth \$5.00. It is true the book is something of a departure from poultry-books in general, and its teachings are sound and reasonable so far as I can judge.



POOR HONEY CROP

in 1906, but we sold in Michigan

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Six Carloads Now In.

The rush is now on. Do not send your orders to the one-horse dealer and be disappointed. We ship goods the same day order is received. Our shipping facilities are the best in Michigan—74 freight and 55 express trains daily.

A. G. Woodman Co.

Long-distance phones: Bell, 181; Citizens, 3120.

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Going Out of Business

Bee-supplies of Every Kind and Business for Sale.

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